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PREFERENCE SHIFTS AFTER LOSS

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by

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ABSTRACT

My dissertation research focuses specifically on how preferences change after experiencing a loss. I investigate not only the loss itself, but also the ensuing outcomes associated with experiencing the loss/constraint. Though prior work has investigated how people deal with loss or contractions, the research has been silent on how people change as a result and how the context these contractions occur in might affect preferences. In this dissertation, I explore the loss of time, money, and space, and the downstream consequences that occur after experiencing such a loss.

My first essay shows that a budget contraction (of time, space, and money) is sufficient to begin the process of preference refinement. When the budget is fully restored, those preferences have been altered and downstream choices are affected. Mediation results show that experiencing a budget contraction causes consumers to prioritize what they value. Thus, when the budget is restored, consumers allocate their resources to fewer categories of consumption.

My second essay studies loss through a different lens. In this research I ask what is the best way to downsize and reduce? Consumers generally believe that they should start by organizing their items (i.e., tidying) and then determine what to get rid of (i.e., reject) when faced with the need to reduce. I show that the best strategy is to focus on what items to keep (i.e., select) from a disordered (i.e., messy) set.

The dissertation concludes by discussing the implications of coping with loss and possible future research directions.

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Chapter 1

INTRODUCTION

1.1 Preference Shifts After Loss

Arthur Schopenhauer is credited with saying, “Mostly it is loss which teaches us about the worth of things.” Think about a time when you have experienced a loss, either imposed or by your own choice. Perhaps you lost your job and experienced a reduction in your household income for some time period. Possibly you decided to take a night class to gain a new skill and experienced a loss of your free time. Or maybe you moved to a smaller house or apartment and experienced a loss of space. In all three of these instances, you had to cope with the loss you experienced in some way, such as not eating out or reducing your clothing items. After dealing with this loss, you might have even felt like a different or changed person in some way. The context in which you experienced the loss might also have shaped your choices. In either case, your preferences most likely shifted, and your priorities were altered. In this dissertation, I explore the loss of time, money, and space, and the downstream consequences that occur after experiencing such a loss.

Prior research has investigated how people deal with loss or contractions. For instance, a loss of income may lead to consumers cutting their spending on non-essential items (Dargay 2001), spending more on essential goods (Kamakura and Du 2012), or reducing the overall number of different items a consumer buys (Carlson et al. 2015). Coping with loss not only affects what we buy but can have a large influence on our

psyche (Harvey 1996). Previous research has also explored how context might affect preferences during a contraction. For instance, much research has shown that rejecting items leads to larger choice sets compared to using a selection strategy (Levin et al. 2002; Park et al. 2000). Disorder has also been found to reduce perceptions of variety thereby decreasing the amount chosen in an assortment (Kahn and Wansink 2004). Compared to the previous research, I seek to study how loss, either self-imposed or forced, can be the catalyst for prioritization and to preference stabilization. I also examine how various conditions may affect these preference shifts.

If a consumer faces a loss of time, money, or space, how might such loss alter the individual's preferences? Loss requires the consumer to engage in some sort of coping. Making trade-offs between options is often how people deal with constraints (Fernbach, Kan, and Lynch 2015); this method of making trade-offs has been found to be a preference stabilizer (Hoeffler and Ariely 1999). Hoeffler and Ariely (1999) examine the difference between easy and difficult choice environments; making difficult trade-offs forced faster preference stabilization.

The purpose of this dissertation is to delve into how loss may alter and stabilize preferences. I investigate these preferences shifts in two ways. In my first essay, I examine how the individual consumer changes in response to experiencing a budget contraction in the domains of time, money, and space. After experiencing a loss, there is the potential that coping with such a loss will produce a psychological dynamic inside the mind of the consumer that changes them and their preferences. Dealing with a contraction tends to put consumers into a scarcity mind-set, causing them to focus on what is most imperative and valuable to them (Mani et al. 2013; Mullainathan and Shafir 2013; Shah,

Shafir, and Mullainathan 2015). Per Schopenhauer in the opening quote, it is during periods of loss that we learn what is most important to us. This results in an altered preference structure when the budget is restored. I follow the choices of specific individuals over time in order to directly address whether preference stabilization after experiencing a contraction has occurred. This essay establishes the preference refinement effect showing that consumers' preferences have been restructured following a loss.

In my second essay, I focus on the domain of space within the context of downsizing to better understand how different environmental contexts affect preferences after experiencing a loss. Arguable, a contraction is the type of difficult choice environment Hoeffler and Ariely (1999) discuss. However, some contraction environments may comparably be more difficult than others. For example, disordered environments (compared to organized spaces) makes information processing more difficult. Specifically, order makes it easier for consumers to make comparisons among their items due to their organization by category (Abrahamson 2002; Simon 1962). When items are disordered, the decision maker will likely evaluate each alternative individually (Bettman and Kakkar 1977; Bettman, Luce, and Payne 1998; McGill and Anand 1989). In this essay, I examine how individuals approach the task of reducing the number of items they own due to space constraints. While consumers' intuition is to reduce items by rejecting from an organized pile, they choose fewer items when they start with disorganized items and decide what to keep. This is because starting with a messy pile is more difficult and facilitates alternative-based processing. Further, because rejection typically leads to larger consideration sets due to rejection involving more finality (Levin

et al. 2002; Park et al. 2000), I show that a selection strategy should be used when downsizing.

1.2 Overview of Two Essays

The first essay titled, “Preference Refinement After A Budget Contraction,” explores whether consumers’ preferences are altered as a result of coping with a budget contraction (i.e., a loss of time, money, or space). This essay looks not only at how choices change in the moment during a budget contraction, but also at how consumers themselves change in response, when their budgets are restored. Contractions cause consumers to prioritize what they value, helping them gain a clearer understanding of what they individually like and don’t like. This prioritization process leads to a lasting reduction in the variety of products chosen by consumers when the budget is restored which I call the *preference refinement effect*.

The work makes an important contribution to a poorly understood part of the preference formation process (i.e., the time when constructed preferences begin to stabilize). The studies also reveal that consumers who experience actual budget contractions (e.g., during government shutdowns) are at a critical inflection point where self-discovery is imminent. Marketers should consider focusing their attention on consumers facing such budget distress.

My second essay is titled, “Disorder and Downsizing,” and investigates loss of space through a difference lens – consumers coping with a loss of space who must downsize. This research asks how does dis/order (messy vs. tidy items and spaces) and decision

strategy (selection vs. rejection) affect the success of those downsizing efforts? Research on the topic of downsizing is surprisingly scant and this essay begins to address this gap as well as determine how environmental context might affect preferences during a contraction. I find that consumers retain fewer items when selecting from a disordered set (i.e., choosing what to keep from messy items) because it is more difficult to make comparisons. The ability to make comparisons underlies this tendency to retain items, especially among maximizers. Rejecting leads consumers to retain more items, regardless of dis/order differences. I show that, in contrast to the effectiveness of selecting from disorder, consumers' lay beliefs favor rejection and order (i.e., choosing what to get rid of from tidy items).

This work has implications not only for consumer downsizing efforts but also consumer welfare and sustainability. As consumers cope with loss of space, they would be better served to start with a mess. Additionally, I identify an important downside to order; order inhibits rather than facilitates downsizing. The well-established difference in rejection versus selection (Levin et al. 2002) is also demonstrated and extended.

This dissertation makes theoretical contributions in the marketing literature areas of preference prioritization, refinement and stabilization, downsizing, disorder and order, selection and rejection, and maximizing. I will now present my two essays.

Chapter 2

ESSAY 1: PREFERENCE REFINEMENT AFTER A BUDGET CONTRACTION

2.1 Introduction

At some point, most consumers will face an unavoidable loss of income due to a major change in their life. Income-reducing changes can result from events such as losing one's job, going back to school, suffering an injury, falling ill, or being furloughed. The amount of income lost in such situations can be substantial. For example, research suggests that the average American who experiences job displacement will face a 25% - 40% reduction in income that year (Stephens 2001), and this percentage can climb as high as 55% during a recession (Pew Research Center 2010). In addition to encountering periodic income contractions, life events can also cause people to experience losses of discretionary time and space due to events such as going back to school while working, starting a second job, having a child, or moving into a smaller house. When consumers cannot borrow against future income, time, or space, events like those above will generally produce a budget contraction, which will necessitate a cut in spending. (Note that we use the term "spending" generally to represent spending of money, time, or space resources.)

Prior research has found that a contracting economy and/or a contracting personal budget causes consumers to cut their spending on non-essential items like cars (Dargay 2001), even those consumed in more visible circumstances (Kamakura and Du 2012), and

to reduce the overall number of different items consumers buy (Carlson et al. 2015). This prior work has focused on either aggregate consumer purchases or how individual consumers allocate a contracting budget. The research has been silent on what effect (if any) dealing with a budget contraction has on consumers' future choices, when the budget has been restored to pre-contraction levels.

The current article advances the idea that coping with a contracting budget causes consumers to prioritize what they value by making trade-offs across alternatives. We posit that the prioritization required when coping with such a budget loss causes a non-transient change or refinement in the consumer's preference structure. These prioritization-driven cuts manifest as a reduction in the number of unique items to which the budget is allocated. If the preference structure of the consumer changes during the contraction, then these "refined" preferences should persist when the budget is restored to original levels. This will produce a specific pattern of allocations in which the number of unique items to which the final budget is allocated is lower than the number of items to which that same budget was allocated initially, so long as a contracted budget was allocated in the interim. We refer to this within-consumer revealed preference pattern as the *preference refinement effect*.

We predict that preference refinement will be greater for those who have, rather than have not, dealt with a budget contraction. We also predict that this greater refinement will occur because managing a budget loss causes consumers to prioritize what they value. In short, we expect loss will indeed be a fine teacher of the worth of things.

The remainder of the article is organized as follows. We review the literature on which the preference refinement hypothesis is based. We then present a series of choice studies that demonstrate the hypothesized effect. We establish moderators of the effect, rule out alternative explanations, and identify the goal of prioritization as the mediating mechanism. We conclude with a discussion of the theoretical and practical implications of this work.

2.2 Theoretical Development

Researchers have been fascinated with loss for decades, and there is a deep literature on how consumers attempt to avoid losses whenever possible (i.e., loss aversion). Indeed, this behavior is the centerpiece of prospect theory (Kahneman and Tversky 1979). But what happens when loss is unavoidable, when it is exogenously determined, when it cannot be thwarted by taking a risky path, and when there is no way to circumvent the loss? According to Harvey (1996), a loss is any “reduction in resources, whether tangible or intangible, in which a person has a significant emotional investment.” In the present work, we are interested in what occurs within the consumer when losses cannot be avoided and must be coped with. How might that process of coping affect both the person and their preferences, and how does it manifest in their downstream choices? Though we do not expect the sort of losses discussed here to produce the same kind of changes as say the loss of a loved one, some research suggests that coping with an unavoidable loss can alter the way people perceive risk and the value they place on

physical items (Ferraro, Shiv, and Bettman 2005; Rindfleisch, Burroughs, and Wong 2009).

The question we address in this article focuses on a particular type of loss – a budget contraction. Specifically, does coping with an unavoidable budget loss lead to a change in a consumer’s preference structure, and if so, what is the process by which this change occurs?

2.3 Coping with Economic Contractions

What evidence do we have that a consumer, coping with budget loss, might undergo a psychological change that persists in future decisions when the budget is restored? To date, we know of no research that has specifically looked at the within-person changes that result from coping with a budget loss.

Prior research has shown, at an operational level, that aggregate consumption patterns differ when the economy contracts versus expands (Hall 1979), and that consumers faced with a contracting budget behave differently than those faced with an expanding or stable budget (Carlson et al. 2015; Dargay 2001; Kamakura and Du 2012; Shea 1995). For instance, Kamakura and Du (2012) found that when the economy is in a recession consumers spend more on essential goods when consumption is not highly visible to others as opposed to during an economic expansion. Further, Shea (1995) found that when consumers’ incomes decrease, consumption changes to a greater degree than if their incomes increased by the same amount. Dealing with a contraction also tends to put consumers into a scarcity mind-set, causing them to focus on what is most imperative and

valuable to them (Mani et al. 2013; Mullainathan and Shafir 2013; Shah, Shafir, and Mullainathan 2015).

The work above does not take a position on what effect, if any, experiencing an unavoidable budget contraction has on a consumer's psychology and/or preference structure. We can think of at least two reasons for this. First, the work above has either examined correlations using aggregate data or has relied on between-participant experiments. Because prior work has not examined changes in the choices of specific individuals over time, it cannot directly address the question of how consumers cope with the loss and whether the choices of a particular consumer trend toward preference restructuring and stabilization as a result of contraction. Second, the idea that a change in one's budget (i.e., the constraint in a utility optimization framework) might alter the shape of one's underlying utility surface (i.e., the objective function to be maximized) flies in the face of most models of consumer choice. For example, optimization models of consumer choice assume that consumers do their best (i.e., optimize their consumer choices) over the constraints that determine which combination of alternatives can be acquired, but they also assume that preferences are not altered as a result of the constraint. Therefore, such models would only apply to consumer choices for those consumers for whom preferences are stable.

The focus of the current work is to examine the idea that coping with a budget contraction will do more than just change behavior in the moment to reflect the loss—it will influence the consumers' underlying utility surface (i.e., their preference structure). Such an alteration would be reflected in the preferences and the subsequent choices revealed within-person by a consumer over time.

2.4 Preference Structure After Coping with a Contraction

There are three ways that coping with a budget contraction might influence consumers' preference structures. One view, perhaps most aligned with rational economic theory, is that utility functions do not change at all when the budget changes (Samuelson and Zeckhauser 1988). This view maintains that whatever consumers do to cope with a budget contraction in the short run can be attributed to a processing convenience (e.g., to avoid negative affect from making overly broad cuts (Carlson et al. 2015)) or situated as a context effect (Bettman, Luce, and Payne 2008). Under this view, consumers who allocate an initial budget, and then allocate a smaller (contracted) budget will not see their underlying utility surface change. When these same consumers are given the chance to allocate the original (higher) budget a second time, this view predicts that their choices will not systematically deviate from the choices they made initially. They will be governed by the same utility function and preference structure they faced initially.

A broad stream of the psychology literature aligns with the rational economic theory in this case. Namely, consistency theories predict that a single consumer who made the same choice under the same budget constraint at two different times in a relatively short span of time would seek to make budget allocations that were the same (Cialdini, Trost, and Newsom 1995; Elliot and Devine 1994; Festinger 1957; Russo et al. 2008; Simon, Snow, and Read 2004; Thagard 2000). Indeed, these motivations are believed to be so strong that they discourage most experimental researchers from using within-participant designs. All things being equal, consistency motives should compel

consumers to make choices that produce pre-contraction and post-contraction allocations (at the same budget level) that do not systematically differ from each other.

A second possibility is that coping with a budget contraction causes utility functions to be transformed reactively (Brehm 1966). That is, consumers who cannot afford certain items when their budget contracts develop an increased affinity for these items compared to consumers who have not dealt with a contraction. This view, which can be thought of as the *reactance hypothesis*, derives from research that has demonstrated that perceptions of scarcity increase an individual's preference for that scarce good (van Herpen, Pieters, and Zeelenberg 2009; Verhallen 1982). For example, van Herpen et al. (2009) found that when products appear scarce they become more popular and are more likely to be chosen. Parker and Lehmann (2011) extended these findings and discovered that popularity perceptions, more so than quality perceptions, drive this increased choice share.

If the inability to acquire certain items under a budget contraction makes these items more appealing, then items cut in response to a budget contraction will not just re-enter the choice set when the budget is subsequently restored, rather these items will re-enter with a larger share of the restored (post-contraction) budget than they had under the pre-contraction budget. This would produce a very specific choice pattern – one where the items cut during the contraction command a larger share of the post-contraction budget than the pre-contraction budget. We believe that the reactance preference pattern is also in keeping with an existing preference that was temporarily suppressed during the contraction rather than an alteration of the preference structure resulting from the contraction. Much like a suppressed goal may return and escalate when it has been

thwarted (Carlson, Meloy and Miller 2013; Chartrand et al. 2008), this account suggests that due to the loss, the suppressed preference will return at an increased level when the budget is restored.

The third possibility, which we call the *preference refinement hypothesis*, is that dealing with a budget contraction will lead to consumers' preference structures becoming altered (i.e., consumers' utility surfaces will change). During the loss, as consumers are forced to cope, they must engage in a process of prioritization in which they home in on what they value most and least. For those who have experienced the contraction, this prioritization will lead to greater preference refinement relative to those who have not dealt with a budget contraction and affect subsequent choices. Empirically, the preference refinement hypothesis suggests that consumers who have experienced a budget contraction and have their budget restored should have fewer unique items in their post-contraction choice sets than they had in their pre-contraction choice sets. Further, we should *not* see an increase in the share of items that were cut during the intervening budget contraction.

This hypothesis derives from two streams of research. First, while consumers often construct preferences “on the fly” among the options available at that point in time (Bettman, Luce, and Payne 1998; Russo, Carlson, and Meloy 2006; Tversky and Simonson 1993), they also often have stable preferences for frequently considered products (Fischhoff 1991; Hoeffler, Ariely, and West 2006). This suggests that preference discovery begins with a construction process and stabilizes with experience, begging the question: what type of experience leads to preference stabilization? To answer this question, we turn to a second line of research that shows that preference

stabilization can be facilitated by making trade-offs. Fernbach, Kan, and Lynch (2015) find that priority planning (vs. efficiency planning) results from experiencing loss and requires that trade-offs be made to eliminate items within the same resource budget (e.g., time for time). Likewise, Hoeffler and Ariely (1999) find that consumers faced with easy choice environments are more likely to have relatively unstable preferences when compared to those who face difficult choice environments (presumably where prioritization is necessary).

We believe that coping with a budget contraction requires precisely the sort of trade-off making and concomitant preference prioritization that gives rise to preference stabilization. As such, we expect that consumers who face the same budget allocation on two different occasions will experience more preference stabilization if they have experienced an intervening budget contraction. This stabilization should manifest itself in a change in the final allocation (as compared to the initial allocation) where the final allocation contains less allocation variety (i.e., fewer unique items) – the *preference refinement effect*. Further, because we claim that prioritization leads to preference restructuring and stabilization, the refined preferences should withstand the test of time and affect choices in new contexts as well.

2.5 Research Overview

To answer the question of whether experiencing a budget contraction leads to a non-transient change in an individual's preferences, we conducted most of the studies using within-person designs. We gave consumers budgets of time, space, or money and

had them allocate these budgets over a set of alternatives. Consumers usually made three allocations: a first allocation at an initial budget level, a middle allocation at a contracted budget level, and a final allocation at the original budget level when the budget was restored. We compare each consumer's initial and final allocation to see if the final allocation contains fewer unique items than the initial allocation. This within-person design allows for detection of small changes in individuals' revealed preferences (via changes in allocation variety) as a result of coping with a budget contraction.

In what follows, we first present a series of studies that show preference refinement in allocations of time to travel, space to resources, and money to products. We then examine theoretically-derived moderators of the effect and rule out some alternative explanations. We show carry-over effects of the refined preferences to a new choice context, and we examine prioritization as the mediating goal. Finally, we demonstrate our effect in a real-world example of contraction: the most recent government shutdown.

2.6 Study 1A: Time

Studies 1A-1D seek to test the preference refinement hypothesis in choices involving time (1A), space (1B), and monetary (1C) budgets. We also look for evidence of the effect in a consequential choice study (1D). To test for preference refinement, we measure the number of unique items to which an initial (pre-contraction) budget was allocated (X_1) and compare this with the number of unique items to which the same size post-contraction budget was allocated (X_3). We then check for a negative difference between X_3 and X_1 (i.e., $X_D < 0$) to determine if preference refinement has occurred. We

also use repeated measures ANOVA to verify that the overall pattern (i.e., time of allocation: X_1 , X_2 , X_3) is consistent with our theorizing.

Participants imagined they were taking a vacation to Europe and subsequently allocated 21 travel days across 12 cities. The travel time then contracted to 7 days and subsequently returned to the original 21 days. The economics/consistency hypothesis predicts that the initial 21-day allocation (X_1) and the third allocation, after the contraction and restoration of the budget (X_3) would, on average, be the same. Under the reactance hypothesis, the items dropped under contraction should reappear in the final allocation as a greater share than some of the items that survived contraction. In contrast, under the preference refinement hypothesis, some of the items eliminated during contraction will not reappear when the budget is restored.

2.6.1 Method

One-hundred nineteen students (43% female, median age = 19) from a large university in the U.S. completed the study and were given course extra credit in exchange for their participation. Students were told that they were planning to go on a three-week European vacation with a friend. A list of 12 cities was displayed (see table 2.1). Participants allocated the 21 days of travel to these 12 cities. In order to travel to a city, at least one day had to be allocated to that city. Next, travel was reduced to 7 days due to a time constraint. Again, participants made allocations from the same list of cities. Participants were prohibited from viewing their prior allocations to reduce the pressure to be consistent. Finally, the full 21 days of travel was again possible – the budget was “restored.” The same allocation procedure was used. For all three allocations, participants

had to allocate the entire travel budget; they were not allowed to carryover or save any travel days. If we had permitted savings, it would not have allowed us to examine the change in an individual's preferences across the available options. The Appendix 2 contains the full stimuli used.

2.6.2 Results

We measured allocation variety for the first 21-day and the second 21-day budgets. For example, if in the first allocation a participant allocated three days each to seven different cities, this would mean X_1 (allocation variety) would equal seven. The preference pattern, from an average of 9.39 cities to 4.76 to 8.97 across the three allocations, revealed the expected pattern (see table 2.1). The average within-participant difference between the first and last allocations ($X_D = X_3 - X_1$) was significantly less than zero ($M = -0.42$, $SD = 1.49$, $(t(118) = -3.07, p = .003)$).

To confirm the results above, a repeated measures ANOVA of the three allocations (at 21, 7, and 21 days) was conducted. The analysis revealed a significant difference (Wilks' $\Lambda = .198$, $F(2, 117) = 236.98$, $p < .001$, partial $\eta^2 = .80$) as well as a significant quadratic trend ($F(1, 118) = 477.17$, $p < .001$). Post hoc analysis revealed that all three allocations were significantly different from each other (all $ps < .01$). Overall, participants allocated the equivalent number of days of travel to fewer cities when allocating the post-contraction budget than when allocating the same budget pre-contraction. Thus, study 1A provides initial evidence for a within-participant preference refinement in the domain of time.

Next, we examined the specific allocation of days to cities. Did cities cut during the contraction re-emerge and steal share away post-contraction from the cities that had been retained during the cut (i.e., evidence of reactance) or did the cities that were cut suffer from reduced share in the final allocation (i.e., evidence of preference refinement)? To answer this question, we calculated the change in share of days in the initial allocation compared to the final allocation for cities cut during the contraction. For instance, if a participant allocated 3 days to Milan in the initial allocation, cut Milan during the contraction, and subsequently allocated 2 days to Milan when the budget was restored, this would demonstrate a decrease in the share of days to Milan and provide support for the preference refinement effect. If, however, Milan had increased to 4 days, this increase in share of Milan would provide support for the reactance account.

The analysis revealed that overall, the preference refinement account was significantly more prevalent than the reactance account. Within-person, the share of the budget allocated to cities that were cut and increased in share when the budget was restored (.134) was significantly less than the cities whose share decreased (.279) ($t(117) = -5.09, p < .001$). Though some individuals exhibited a pattern of reactance, preference refinement was twice as common.

2.7 Study 1B: Space

Study 1B sought to test for the preference refinement effect in a choice requiring the allocation of a space budget. Participants in this study allocated different vegetables to a community garden plot. Paralleling the design of study 1A, participants allocated 12

vegetable varieties to 21 planting rows, then to 7 rows, and then again to 21 planting rows. As in study 1A, we expected that the mean preference difference (X_D) would be less than zero signaling that the allocation variety had decreased and preferences had refined.

2.7.1 Method

Participants ($n = 123$) were students (46% female; median age = 20) at a large university in the U.S. who received course extra credit in exchange for their participation. Students were asked to imagine they had decided to plant a garden and had received 21 rows of space. They were presented with 12 vegetables and instructed that one vegetable could be planted per row (see table 2.1). Following the method of study 1A, individuals made three allocations of vegetables to garden space – from 21 rows (X_1), to a contracted 7 rows (X_2), and a final allocation (X_3) to the full 21 rows. (The stimuli are available in the Appendix 2.) After the final allocation, participants completed basic demographic questions.

2.7.2 Results

The vegetable allocation exhibited the expected preference pattern, from 8.74 different vegetables, to 4.97 during the contraction, to 8.27 in the final. The mean difference (X_D) was significantly less than zero ($M = -0.47$, $SD = 1.69$) ($t(122) = -3.10$, $p = .002$) (see table 2.1). Using the three allocations, the repeated measures analysis

revealed an overall significant difference between the mean number of vegetables chosen at each time allocation, Wilks' $\Lambda = .29$, $F(2, 121) = 146.55$, $p < .001$, partial $\eta^2 = .71$, as well as a significant quadratic trend ($F(1, 122) = 286.94$, $p < .001$). Post hoc comparisons revealed that the mean number of vegetables selected differed at all three time periods (all $ps < .01$).

We also examined the data patterns for reactance and our proposed preference refinement effect. Following the method outlined in study 1A, the analysis again revealed that overall, the preference refinement effect was more prevalent than the reactance account. Within-person, the share of the budget allocated to the unique vegetable categories that were cut and increased in share when the budget returned to previous levels (.123) was significantly less than the vegetables whose share decreased as a result of the contraction (.321), $t(122) = -5.84$, $p < .001$.

2.8 Study 1C: Money

In this study, we examine whether the preference refinement effect generalizes to the domain of money and test for preference refinement when a contraction is either believed to be permanent or temporary. The context for the study was allocating money to various shore excursions while on a cruise. Starting with an initial budget of \$300 and a list of 15 shore excursions to which one could allocate money, we then imposed the budget contraction, reducing the budget to \$100. To instantiate the contraction, participants were told that their paycheck had either been cut permanently or temporarily. After making the allocation under the contraction, all participants were told that the

budget was subsequently restored to \$300. Because the process of prioritizing would occur for both a temporary and a permanent budget cut, we did not expect differences between conditions.

2.8.1 Method

Students ($n = 223$) at a large university in the U.S. participated in this study in exchange for extra credit (53% female; median age = 19). Participants imagined they were going on a cruise for spring break and wanted to book shore excursions. Participants first allocated \$300 across a set of 15 different shore excursions (e.g., Deep Sea Fishing Adventure, Parasail Adventure Tour) (see table 2.1). Participants then learned that where they work full-time was having a bad year and their pay was being either permanently or temporarily cut, leaving only \$100 to allocate across the same 15 shore excursions. Participants made the second allocation. They later learned their pay was restored and \$300 was again available to allocate to shore excursions. (The full stimuli are available in the Appendix 2.)

2.8.2 Results

First, we calculated the number of unique shore excursions that dollars were allocated to across the three allocations. Repeated measures ANOVA revealed an overall significant difference for time of allocation, Wilks' $\Lambda = .38$, $F(2, 220) = 181.27$, $p < .001$, partial $\eta^2 = .62$. The interaction between time of allocation and condition (i.e., temporary

or permanent contraction) was not significant, Wilks' $\Lambda = .99$, $F(2, 220) = .74$, $p = .48$, partial $\eta^2 = .007$. This provides initial evidence that the preference refinement effect is driven by the act of prioritizing during the contraction itself and not by the nature of the contraction (i.e., temporary or permanent).

As there was no difference between the temporary and permanent contraction, the conditions were collapsed. The allocation exhibited the expected preference pattern, from 5.53 different excursions, to 2.92 during the contraction, to 5.32 in the final. The mean difference (X_D) was significantly less than zero ($M = -0.20$, $SD = 1.50$) ($t(222) = -2.05$, $p = .04$). Repeated measures analysis confirmed that there was a significant difference for allocation time point, Wilks' $\Lambda = .38$, $F(2, 221) = 181.11$, $p < .001$, partial $\eta^2 = .62$. As expected, a significant quadratic trend was also found ($F(1, 222) = 362.22$, $p < .001$). Post hoc tests showed that the mean number of shore excursions was significantly different between each time period in the repeated measures ANOVA (all $ps < .05$).

We next examined the specific choice shares as in studies 1A and 1B. The proportion of cut shore excursions that increased in share (.10) was significantly less than the proportion of excursions that decreased in share (.43) ($t(222) = -11.37$, $p < .001$).

2.9 Study 1D: Consequential Choice

Study 1D used allocations of financial tokens to acquire real Easter candies in a consequential choice study. Participants were told that they would be able to earn tokens (which would constitute their budget) by completing a decision-making task and performing well. By expending effort to earn the tokens and knowing they would be

taking the candies with them, we expected participants to exercise more care in making their allocations. They performed an initial allocation of tokens to a variety of Easter candies, but were later told that they had lost some tokens due to poor performance on the decision-making task. Participants later earned the tokens back and were able to allocate the original number of tokens to Easter candies (see Appendix 2 for stimuli).

To verify that the hypothetical choice studies reported above serve as a good approximation for what happens in consequential choice, we included a hypothetical choice condition in study 1D. The same procedure was used in the hypothetical condition as in the consequential choice condition, but no candy was distributed to these participants. The two conditions together allow for a comparison between consequential and hypothetical choice.

2.9.1 Method

Participants ($n = 178$) were students (32% female; median age = 19) at a large university in the U.S. who were given course extra credit in exchange for participating in this study. The study was conducted just before Easter; participants were told they would be selecting Easter candies for themselves. Students participated in one of two choice conditions: consequential or hypothetical. Consequential choice participants were told they would receive the candy at the completion of the study, but otherwise the procedures were identical.

Participants allocated 21 tokens across 12 different types of candies, each costing a different number of tokens (see table 2.1 for each candy's token cost). Participants were

instructed to put the number of tokens they wanted to allocate next to each candy. For example, if a participant wanted three Starburst Minis, they would place a 6 (3 Starburst Minis x 2 tokens) next to that item. Next, the participants completed the task that would enable them to earn the tokens, a choice task involving selecting the more deserving of two scholarship applicants (Meloy, Russo, and Miller 2006).

After reviewing the materials and making a choice, all participants learned that they had made the wrong decision in the token earning task and so had earned just 7 tokens. Students then completed the Positive and Negative Affect Schedule (PANAS) (Watson, Clark, and Tellegen 1988). They subsequently allocated the 7 tokens across the same set of candies. We used the PANAS to verify that the contraction was not inducing a negative affective state and this affective state was not leading to the preference refinement effect (see Appendix 1 for full PANAS analysis). After making the contracted allocation to the Easter candies, we told participants they had a chance to earn back the full 21 tokens by participating in a final task. After completing this task, all students were told that they had earned the 21 tokens back and they again allocated the tokens across the 12 Easter candies.

2.9.2 Results

We examined the participants' allocation variety using repeated measures ANOVA. This analysis revealed an overall significant difference for time of allocation (Wilks' $\Lambda = .32$, $F(2, 175) = 190.10$, $p < .001$, partial $\eta^2 = .69$) and a non-significant interaction between allocation and condition (consequential versus hypothetical) (Wilks'

$\Lambda = .985$, $F(2, 175) = 1.30$, $p = .27$, partial $\eta^2 = .12$). As such, we collapsed across conditions. The analysis again showed a significant difference for time of allocation, Wilks' $\Lambda = .32$, $F(2, 176) = 187.83$, $p < .001$, partial $\eta^2 = .68$. The quadratic trend was significant for the time of allocation ($F(1, 177) = 374.61$, $p < .001$). Pairwise comparisons revealed all time allocations were significantly different in terms of the number of candies chosen (all $ps < .02$).

The mean preference difference (X_D) was calculated. The number of unique candies selected in the final allocation was significantly smaller than the initial allocation ($M = -0.20$, $SD = 1.04$; $t(177) = -2.52$, $p = .01$). The initial mean candy allocation variety was 5.08 and the final candy allocation variety was 4.89. The mean number of unique candies selected during the contraction was 2.81. (See table 2.1 for full details.) In keeping with studies 1A-1C, the proportion of cut candies that increased in share (.116) was significantly less than the proportion of candies that decreased in share (.41) ($t(177) = -9.19$, $p < .001$).

2.9.3 Discussion

Studies 1A-1D provide evidence of the preference refinement effect in time, space, and money. Study 1C shows that whether the budget contraction is permanent or temporary does not affect the level of preference refinement occurring. Further, study 1D shows that the effect occurs not only in hypothetical choice but also in consequential choice, and the differences between hypothetical and consequential choice are not significant. Table 2.1 shows the summary results for all four experiments. Participants

allocated their budgets to a smaller number of unique items after a contraction and subsequent restoration to pre-contraction budget levels than would be predicted either by economic or consistency theories. Finally, the findings provide evidence that the results cannot be attributed to the reactance account but reveal an altered preference structure consistent with our preference refinement account.

2.10 Follow-up

All our scenarios thus far have allowed participants to control both the items to which they allocate their budget and the quantity selected. In this follow-up, we remove control of quantity by examining allocations where consumers can select only a single unit of each item, and where there is no forced expansion to the original budget level. We predict that those required to reconcile a budget contraction by cutting items from their initially endowed set will have fewer items in their final set than those who are simply invited to remove any unwanted items from the initial endowment.

We hypothetically endowed female consumers with 25 unique make-up items (e.g., lipstick, mascara, tweezers, brush, band-aids) in a make-up bag. All participants were informed that they needed to move the items to a new make-up bag. Half of the participants were restricted to a maximum of 8 items in the new make-up bag (i.e., contraction condition); the other half had no restriction and could keep up to 25 items (i.e., no contraction condition). Both groups were later told that their mother had provided a new bag that could accommodate all 25 items. (See appendices 1 and 2 for stimuli and full details of the method and results.)

Table 2.1
Studies 1A-1D Summary Results

Study	Budget Type/Choice Domain	Number of items available for allocation in the choice domain	Budget Levels (initial-contracted-expanded)	Number of items to which initial budget was allocated	Number of items to which contracted budget was allocated	Number of items to which expanded budget was allocated	Mean Difference (expanded minus initial allocation) in number of items to which budget was allocated , p-value
1A	Time/Travel	12 cities ^a	21 days -7 days -21 days	9.39 (2.64*)	4.76 (1.48*)	8.97 (2.54*)	-.42, $p = .003$
1B	Space/Garden Seeds	12 plants ^b	21 rows -7 rows -21 rows	8.74 (3.12*)	4.97 (1.85*)	8.27 (3.31*)	-.47, $p = .002$
1C	Money/Shore Excursions	15 excursions ^c	\$300-\$100-\$300	5.53 (3.04*)	2.92 (2.42*)	5.32 (3.01*)	-.20, $p = .04$
1D	Tokens/Easter candy	12 candies ^d	21 tokens -7 tokens -21 tokens	5.08 (2.01*)	2.81 (.94*)	4.89 (1.98*)	-.20, $p = .01$

* standard deviation

a = Amsterdam, Lisbon, London, Madrid, Marseilles, Milan, Munich, Naples, Paris, Prague, Rome, Vienna

b = Broccoli, Brussels Sprouts, Cabbage, Cucumbers, Green Beans, Kale, Leaf Lettuce, Melons, Peppers, Spinach, Tomatoes, Zucchini

c = Adventure Yacht Turtle and Reef Snorkel, An Evening of Rum and Reggae, Bahama Royal Blue Golf (18 Holes), Kayak Adventure, VIP Beach Cabana with Lunch (for 2 guests), Swim with the Dolphins on Blue Lagoon Island, Eco Nature Walking Tour, Blue Lagoon Island via Segway and Beach Day, Certified Scuba Dive, Guided Tour of Marine Life aquarium, Sightseeing Tour of Nassau in Jeep, Deep Sea Fishing Adventure, Full Day Beach Bungalow Rental, Parasail Adventure Tour, All Day Relaxing Spa Getaway

d = Dove Dark Chocolate Eggs (3), Hershey's Cookies 'n' Creme Eggs (1), Hershey's Milk Chocolate Eggs (1), Hershey's Mini Bunnies (3), M&M's Fun Size (2), Reese's Mini Reester Bunnies (3), Rolos (2), Sour Patch Bunnies (2), Starburst Minis (2), Swedish Fish Treat Size (2), Tootsie Fruit Chews (1), Twix Minis (2). Numbers in parentheses represent number of tokens required to purchase each item. The token prices are proportional to the retail prices.

We then compared the final number of items selected for inclusion in the Mom-provided make-up bag across conditions. In the contraction condition, the final number of items was 13.94 ($SD = 3.45$), a number significantly lower than the no-contraction condition ($M = 16.66$, $SD = 4.68$; $F(1, 100) = 11.19$, $p = .001$, partial $\eta^2 = .10$). The preference refinement effect generalizes to settings where consumers are permitted to reduce or expand as they wish and where every item is unique. Facing a budget contraction led individuals to retain fewer items in the final, unrestricted space, compared to individuals who had not faced a contraction. The findings also help us rule out an alternative explanation – that the effect is driven by depletion or decision fatigue—because participants in both conditions considered the same number of options.

Thus far, we have examined rather substantial cuts in a budget (i.e., more than a 50% reduction). An open question is: how substantial does a contraction need to be in order to generate the preference refinement effect? Additionally, will the preference refinement effect appear if the choices made during the contraction are determined by someone else and not self-determined? In the next two studies, we explore these two potential moderators of the preference refinement effect.

2.11 Study 2A: Strength of Contraction

Studies 2A and 2B examine factors that should, based on our theorizing, moderate the magnitude of the preference refinement effect. In study 2A, we manipulate the size of the budget cut during the contraction – one constrained budget allowed the participant to pick one of everything and the other did not. We expect that greater contraction will put

more pressure on participants to prioritize what they value, and so should lead to a stronger preference refinement effect. In study 2B, we manipulate whether the contracted allocation decision is made by the participant or by someone else. When the contracted allocation decision is made by someone else, the preference refinement effect should be eliminated.

This study manipulated the magnitude of contraction applied to a travel time budget. The loss of time was either extreme (14 days lost) or modest (7 days lost). The stimuli from study 1A were used. We reasoned that those experiencing a more extreme contraction would be forced into greater prioritization, resulting in increased preference refinement.

2.11.1 Method and Results

Amazon Mechanical Turk workers ($n = 128$; 44% female; median age = 35) received a small payment for their participation. The magnitude of the contraction was manipulated to either be modest (14 days remaining) or extreme (7 days remaining).

In the modest contraction condition, the mean preference difference from the initial allocation to the final allocation ($M = -0.11$, $SD = .80$) was not significantly less than zero, ($t(63) = -1.10$, $p = .28$). The mean number of cities chosen in the first 21-day allocation ($M = 8.48$, $SD = 3.41$) was directionally greater than in the second 21-day allocation ($M = 8.37$, $SD = 3.55$). During the contraction, participants chose, on average, 7.16 cities ($SD = 3.80$).

In the extreme contraction condition, the mean preference difference ($M = -0.61$, $SD = 1.87$) was significantly different than zero, ($t(63) = -2.61$, $p = .01$). The first 21-day allocation ($M = 8.84$, $SD = 3.43$) was larger than the second, post-contraction 21-day allocation ($M = 8.23$, $SD = 3.49$). During the contraction, participants chose, on average, 4.25 cities ($SD = 2.21$). Finally, the preference difference between the extreme and the modest contraction conditions was significant ($p = .05$).¹ Taken together, the results suggest that more extreme contractions facilitate the emergence of the preference refinement effect.

2.12 Study 2B: Self- vs. Other-Determined Constraints

This study explores whether the prioritization process required when a decision maker copes with a budget cut him/herself is necessary for the preference refinement effect to emerge. We predict that prioritization and the preference refinement effect require that the decision maker wrestle with the budget cut directly (i.e., which categories to drop). As such, we expect that preference refinement will be mitigated when decision makers are told which specific cuts to make. The travel stimuli from study 1A were again used.

¹ Using repeated measures analysis, the mean number of cities chosen at each allocation time point was significantly different (Wilks' $\Lambda = .35$, $F(2, 125) = 118.15$, $p < .001$, partial $\eta^2 = .65$), but was qualified by an interaction between condition and allocation time point (Wilks' $\Lambda = .64$, $F(2, 125) = 34.87$, $p < .001$, partial $\eta^2 = .36$). In the modest contraction condition, the comparison between the initial and final allocation mean number of cities was not significantly different ($p = .543$), while the same comparison in the extreme contraction condition was significantly different ($p = .001$).

2.12.1 Method

Students (46% female; median age = 18) were recruited from a large university in the U.S. and earned course extra credit for their participation. Two hundred twenty-seven participants were randomly assigned to either a self- or other-determined condition. In both conditions, students initially allocated 21 travel days across 12 cities. As in the contraction conditions in the previous studies, those participants in the self-determined condition faced a contracted (7-day) budget and had to rely on their own personal preferences to select the cities for those seven days. In the other-determined condition, a travel companion chose three cities (i.e., Amsterdam, London, and Paris) for the 7-day trip, and participants allocated the specific number of days to travel to each of these three cities. (We note that these three cities were always the most popular with the participant population. Even though participants were not permitted to select the cities in the other-determined condition, the cities selected by the friend to visit were the most appealing cities. See additional analysis in Appendix 1 concerning this point.) All three cities had to have at least one day of travel allocated; participants who failed this instruction were eliminated from the study ($n = 8$), leaving a total of 219 participants. Individuals in both conditions then allocated 21 days of their post-contraction budget to the same 12 cities (see Appendix 2 for stimuli).

2.12.2 Results

First, we examined preference refinement across the two conditions. In the self-determined condition ($n = 113$), the first 21-day allocation ($M = 8.73$, $SD = 2.56$) was greater than the second 21-day allocation ($M = 8.37$, $SD = 2.64$). The preference difference ($M = -0.36$, $SD = 1.76$) was significantly less than zero ($t(112) = -2.19$, $p = .03$). As expected, this replicates the preference refinement effect. The mean number of unique cities chosen during the contraction was 4.27 ($SD = 1.64$). In the other-determined condition ($n = 106$), however, the mean number of cities chosen in the first 21-day allocation ($M = 9.00$, $SD = 2.47$) was significantly *less* than the second 21-day allocation ($M = 9.22$, $SD = 2.48$). In other words, the number of cities visited after the contraction *increased*. The preference difference ($M = 0.22$, $SD = 1.13$) was significant ($t(105) = 1.98$, $p = .05$), but in the opposite direction of preference refinement and more consistent with the reactance account.

We conducted a repeated measures ANOVA analysis to confirm the results. Overall, there was a significant effect of allocation time point, Wilks' $\Lambda = .16$, $F(2, 216) = 564.64$, $p < .001$, partial $\eta^2 = .84$, and a significant interaction between allocation and condition, Wilks' $\Lambda = .82$, $F(2, 216) = 23.17$, $p < .001$, partial $\eta^2 = .18$. Pairwise comparisons revealed that in the self-determined condition, the mean number of cities chosen was significantly different at each point in time (all $ps < .05$). In the other-determined condition, the difference between the initial and contraction allocation was significantly different ($p < .001$), but the difference between the first 21-day allocation and the final 21-day allocation was not ($p = .14$). The results demonstrate that the choice

of allocation variety during the contraction must be made by the self and not be determined by someone else for the preference refinement effect to emerge.

2.12.3 Discussion

Studies 2A and 2B establish theory-consistent boundary conditions on the preference refinement effect. Study 2A suggests that a more extreme contraction necessitates more rigorous prioritization as individuals determine which options they should retain during the contractionary period. Additionally, study 2B reveals that decisions about which options to cut must be made by the self, not others, for the preference refinement effect to occur. This study provides preliminary evidence that anchoring cannot account for the effect because participants in both conditions were anchored on the same seven-day budget during the contraction allocation. Further, if the anchor value was the number of cities allocated to during the contraction, the lower anchor value in the other-determined condition should have led to reduced variety in the final allocation in this condition, relative to the self-determined condition. This did not occur.

All the studies have so far shown a robust preference refinement effect. To establish that a contraction leads to real preference change, it would be beneficial to show that refined preferences persist over time. In the next study, we seek to establish that the preferences formed during the contraction and which are revealed when the original budget is restored are lasting. We also address remaining alternative explanations.

2.13 Study 3: The Endurance of Prioritization-Driven Refinement

If preference refinement occurs as a result of a prioritization process as we have hypothesized, then the refinement and change in preference structure should be more stable than transitory. This study was designed to test for preference stabilization over time following a budget contraction, while also more fully ruling out anchoring and under-adjustment and consistency as alternative explanations.

To test the focal idea that the preference refinement effect reflects a persistent change in priorities, we created stimuli similar to study 1A (time) and asked participants to perform an additional fourth allocation (X_4) two days after making the first three allocations. If prioritization occurs and preference refinement and stabilization is responsible for this, there should be no difference between X_3 and the measurement of preference two days later (X_4) at the same budget level. If, however, anchoring and under-adjustment is responsible, then we should find no difference between X_1 and X_4 because preferences will revert to initial levels once the salience of the anchor is gone. That is, the allocation at X_4 should approach X_1 as the effect of the anchor value dissipates. A similar argument can be made for a consistency explanation. The effects of consistency should diminish with time, so if consistency is the cause, then the X_4 allocation should lie between X_1 and X_3 in magnitude.

2.13.1 Method

Students ($n = 77$; 56% female; median age = 19) from a large university in the U.S. received course extra credit in exchange for their participation. Though 77 individuals participated in the initial study, only 63 individuals responded within 48 hours to the follow-up survey sent two days later. We focus on the responses from these 63 individuals who provided full data.

Participants responded to a travel scenario similar to that of study 1A. Participants first selected cities to travel to by allocating 21 days (X_1), then 7 days (X_2), then 21 days again (X_3), and two days later allocating 21 days for a final time (X_4). (See Appendix 2 for the full stimuli.) Before providing the fourth allocation, students were reminded of the scenario and were then asked to allocate 21 days of travel to the cities for the final time. This was the end of the survey; no additional allocations were performed.

2.13.2 Results

Before getting to the focal analysis, we tested for the preference refinement effect by comparing the first and third allocations' variety on the first day. We find evidence of the standard preference refinement effect ($M = -0.33$, $SD = 1.15$; $t(62) = -2.30$, $p = .03$), providing additional support for the idea that preferences are refined during the budget contraction. The mean number of cities chosen in the first 21-day (X_1) allocation ($M = 8.76$, $SD = 1.90$) was greater than in the second 21-day (X_3) allocation ($M = 8.43$, $SD = 2.17$). The contraction mean number of cities (X_2) was 4.79 ($SD = 1.65$).

Next, we compared the initial allocation variety (X_1) against the allocation variety two days later (X_4). For the latter, the mean number of cities chosen in the final 21-day allocation (X_4) ($M = 8.30$, $SD = 2.13$) was significantly lower than the initial 21-day allocation (X_1) ($M_{X_4-X_1} = -0.46$, $SD = 1.20$; $t(62) = -3.04$, $p = .003$). We note that although there was an additional decline between X_3 and X_4 , it was not a significant difference ($M = -0.13$, $SD = .91$; $t(62) = -1.11$, $p = .27$). The results reveal a lasting change in preference - the preference refinement that occurred during the contraction continued to affect allocation variety two days later.

A repeated measures ANOVA confirmed that the mean number of cities chosen at the four allocation points (i.e., X_1 , X_2 , X_3 , X_4) were significantly different, Wilks' $\Lambda = .14$, $F(3, 60) = 124.75$, $p < .001$, partial $\eta^2 = .86$. The non-linear (i.e., quadratic and cubic) trends were significant ($p < .001$). Contrasts revealed that the mean number of cities chosen in the first 21-day allocation was significantly greater than all other allocations (all $ps < .03$). There was statistically no difference between X_3 and X_4 , confirming the earlier result.

Finally, we examined the data for reactance. Starting with the difference between X_1 and X_3 , the analysis showed that the share of the budget allocated to the unique cities that were cut and increased in share when the budget returned to previous levels (.08) was significantly less than the cities whose share decreased as a result of the contraction (.19), $t(62) = -3.07$, $p = .003$. This was also the case for the difference between X_1 and X_4 with the share that increased (.14) being significantly less than the cities whose share decreased (.25), $t(62) = -2.85$, $p = .006$.

2.13.3 Discussion

This study establishes that the preference restructuring that occurs during a budget contraction has a lasting impact on preferences when the budget is restored. Assuming there is some push to be consistent between the initial allocation variety (X_1) and the final allocation variety (X_3) or that anchoring is playing some role, the two-day delay should make consistency and anchoring fade. We do not find evidence for either consistency or for anchoring. What we see instead is that refined preferences persist (X_4).

The results of study 3 suggest that loss leads consumers to a lasting understanding of what one really likes or dislikes. In the next study, we further test this persistence idea by demonstrating that what one likes and dislikes will carry forward to a new choice context.

2.14 Study 4: Downstream Consequences of Prioritized Preferences

In this study, we sought to determine if preference restructuring and stabilization that occurs during the contraction carries over to a new choice context that would be made using the same preference structures. We use Shafir's (1993) select-reject paradigm applied to a choice between an impoverished and an enriched option. Shafir (1993) showed that when an individual is selecting, positive features are weighted more heavily than negative features. However, when an individual is rejecting, negative features take precedence. Therefore, an option that has two well-liked features and two disliked

features (an enriched option) will be both selected and rejected more than an option with four acceptable but relatively neutral features (an impoverished option).

Our logic in selecting this paradigm and our predictions for it are as follows. We expect those who have dealt with a contraction will have a better sense of what they like and what they don't like, and this will carry forward to the new choice context. If preference refinement arises from prioritizing options as a result of a budget contraction, then these refined preferences will better allow participants to identify the alternatives they like and do not like, and this will create conditions necessary to exacerbate the select-reject effect. To see why, consider one choice set that is comprised of options you both like and dislike (the enriched option) and a second set that is comprised of options you are neutral to (the impoverished option). Based on Shafir (1993), choice share of the option that is enriched should be strengthened for those whose preferences have become refined through a contraction. Thus, we expect that those who have faced a contraction will both select and reject the enriched option more than those who have not faced a contraction.

2.14.1 Method

Amazon MTurk workers ($n = 251$) received a small payment for their participation (40% female; median age = 35). The travel stimuli from study 1A were used. Participants were assigned to either a no-contraction condition (21-21-21) or a contraction condition (21-7-21). (See Appendix 2 for full stimuli.) Finally, measures of satisfaction with the final 21-day planned trip were assessed.

After the three travel day allocations were made, all participants were given a choice between an impoverished and an enriched option under either select or reject instructions. We told participants that they were looking through a magazine and found two different travel agency ads offering European vacation packages. Both advertised trips were 8 days in length and included 4 different city destinations. In order to create different trip packages, we categorized cities based on previous travel studies according to whether the cities were well-liked, disliked, and neither well-liked nor disliked (i.e., neutral). The analysis showed that the most popular travel destinations were Paris and London, and the least popular were Lisbon and Marseilles. The cities in the middle were Milan, Munich, Vienna, and Prague. The first travel package, Trip A, consisted of the most liked and disliked cities: Paris, London, Lisbon, and Marseilles. In Shafir's (1993) terms, this was the enriched option. Trip B consisted of four cities that individuals were neutral to (i.e., the impoverished option). Participants were randomly assigned to either a select condition or a reject condition. Based on Shafir (1993), we predicted that Trip A would be selected and rejected more so than Trip B. We also predicted that the size of this effect would be larger for those who had experienced a budget contraction earlier in the study. These participants would have a clearer understanding of which cities they liked and did not like and so the focus on selecting (rejecting) appealing (unappealing) cities would be more pronounced for these participants.

2.14.2 Results

To verify the presence of preference refinement, we used repeated measures ANOVA on the allocations in the first part of the study (i.e., that replicated study 1A). Overall, we found a significant main effect of allocation time point, Wilks' $\Lambda = .45$, $F(2, 248) = 153.71$, $p < .001$, partial $\eta^2 = .55$, and a significant interaction between allocation time and condition, Wilks' $\Lambda = .43$, $F(2, 248) = 166.49$, $p < .001$, partial $\eta^2 = .57$. Post hoc analysis demonstrated that in the no-contraction condition, there was not a significant preference difference across the three allocations ($M_1 = 8.26$, $SD_1 = 3.34$; $M_2 = 8.38$, $SD_2 = 3.57$; $M_3 = 8.33$, $SD_3 = 3.49$; all $ps > 0.55$). In the contraction condition, however, there was a significant preference difference ($M = -0.49$, $SD = 1.94$). The mean number of cities in the initial 21-day allocation was significantly larger ($M = 8.92$, $SD = 3.48$) than the final allocation ($M = 8.43$, $SD = 3.67$) ($p = .005$). The contraction allocation mean number of cities selected was 4.35 ($SD = 2.13$). All allocations were significantly different from each other ($p < .001$ in all cases).

We then examined how satisfied individuals were with their final 21-day trip using a 1 (extremely dissatisfied) to 7 (extremely satisfied) scale. The mean level of satisfaction was significantly lower in the no-contraction condition ($M = 5.66$, $SD = 1.26$) compared to the contraction condition ($M = 6.07$, $SD = 1.02$) ($F(1, 249) = 7.95$, $p = .005$). This suggests that individuals were more satisfied with their final allocation of time to travel because they had prioritized what really mattered to them.

Does preference refinement carry over to a new choice context? To answer this, we looked at the response to the vacation package question. If the budget contraction

leads to preference restructuring and refinement that persists across choices (and contexts), we would expect to see accentuation of preference for the enriched option when individuals have faced a budget contraction. There was a significant association between trip choice and selecting or rejecting ($X^2(1) = 20.82, p < .001$). Overall, Trip A (the enriched option) was both selected and rejected, on average, 67% of the time. This replicates Shafir's basic finding. More importantly, after experiencing a budget contraction, we see a strengthening of this select-reject difference. That is, for those who had experienced a budget contraction earlier, the proportion selecting Trip A was significantly higher (87.1%) compared to those in the no-contraction condition (74.2%), $z = -1.81, p = .03$. Similarly, those who had experienced a budget contraction earlier rejected Trip A significantly more (60.9% of the time) than those who were in the no-contraction condition (46.0%), $z = -1.68, p = .05$. In both select and reject, the percentage was larger in the contraction condition compared to the repeated choice.

A logistic regression was performed to determine the effect of contraction condition (yes/no) and select-reject on whether Trip A was chosen. The logistic regression model was significant, $X^2(3) = 27.53, p < .001$. Condition was marginally significant ($p = .09$) and select-reject was significant ($p = .002$). The interaction between condition and select-reject was not significant. In the contraction condition, participants were 1.8 times more likely to choose Trip A compared to those in the no contraction condition. Facing a budget contraction led to accentuation of select-reject differences.

2.14.3 Discussion

Study 4 demonstrates that a budget contraction leads to preference refinement and increased satisfaction because individuals have a clearer idea of what they like and what they don't like. This is a lasting change that carries forward to subsequent choice in a new context – an accentuation of select-reject differences for an enriched option.

Individuals were more likely to select and reject the enriched option when they had faced the task of making a budget cut earlier in the study relative to a no-contraction condition.

We have contended that a budget contraction forces individuals to prioritize what they value among the available options. Study 5 is designed to more explicitly test the goal of prioritization as the intervening process that occurs during the budget contraction and explains the preference refinement effect.

2.15 Study 5: Prioritization Motive as the Mediator Between Contraction and Refinement

Study 5 was designed to establish that the goal to prioritize drives the preference refinement effect. To gather evidence on processing motivations, we employed a method designed to capture the goals that are active during a decision process (Carlson et al. 2014) and examined four candidate goals: prioritize options, seek consistency, avoid negative feelings, and maximization. We included the goal of consistency because there is a theoretical basis for thinking it could be operating, despite our efforts to rule it out earlier. We also included avoid negative feelings and maximization goals as those could be alternative explanations for what is driving the effect. These four candidate goals were

measured at different points in the choice process. Based on our theorizing, we expected that the goal of prioritizing would be the driver of the preference refinement effect, and that the other three goals would not mediate the effect.

2.15.1 Method

Students (n = 206; 34% female; median age = 19) at a large university in the U.S. participated in this study in exchange for course extra credit. Participants were randomly assigned to either a no-contraction (21-21-21) or a contraction condition (21-7-21) that mirrored prior studies in the domain of time.

To verify a heightened activation of the prioritize goal after learning about the budget contraction, we followed the catching goals in-process method outlined in Carlson et al. (2014). At the start of the study, all participants were told that the research was about goals and they were provided with a general description of what goals are. We then asked them to become familiar with the following goals: “prioritize options,” “seek consistency,” “avoid negative feelings,” and “maximization.” We defined prioritize options, the focal goal, as *the desire to figure out my priorities and select options which most clearly match those priorities, even if this means giving up other attractive options* (see Appendix 2 for full stimuli). To verify that participants understood what each goal meant, they read multiple scenarios and answered questions that required them to match scenarios with goals. If the wrong goal-scenario combination was selected, we provided an explanation as to why it was wrong.

After practicing with the goal definitions, students completed an initial goal activation log to a) give participants practice using the measures, and b) to provide a baseline of how much each individual was seeking to achieve each of the four goals at the outset. The instructions asked how much they wanted to achieve each goal right now and to rate how active each goal was using a 0 to 10 scale (0 = much less active than typical, 10 = much more active than typical). The goals and associated definitions were displayed for the participants' reference. Once the baseline goal activations were assessed, participants moved to the travel scenario and allocation task.

In both conditions, after making their initial 21-day allocation, and finding out they would have to make a second allocation decision, participants completed the goal activation log. After completing the second goal log, they allocated either the 21 or 7 days to the cities, depending on condition. Finally, individuals made the final 21-day allocation and completed a third goal activation log.

2.15.2 Results

First, we examined the preference refinement effect across both conditions using repeated measures ANOVA. Overall, the analysis revealed that allocation time point was significant, Wilks' $\Lambda = .32$, $F(2, 203) = 212.54$, $p < .001$, partial $\eta^2 = .68$, as well as the interaction between allocation and condition, Wilks' $\Lambda = .36$, $F(2, 203) = 184.06$, $p < .001$, partial $\eta^2 = .65$. Follow-up contrasts showed that in the no-contraction condition, there were no significant preference differences across allocations ($M_1 = 8.59$, $SD_1 = 2.04$; $M_2 = 8.36$, $SD_2 = 2.23$; $M_3 = 8.40$, $SD_3 = 2.18$; all $ps > 0.15$). In the contraction

condition, there was a significant and expected preference difference ($M = -0.63$, $SD = 1.84$). The mean number of cities in the initial 21-day allocation was significantly larger ($M = 8.03$, $SD = 2.28$) than the final allocation ($M = 7.40$, $SD = 2.37$) ($p < .001$). The contraction allocation mean number of cities selected was 4.16 ($SD = 1.58$). All allocations were significantly different from each other (all $p < .001$) in the contraction condition.

We next examined the change in goal activations for the four goals over the three allocation decisions for both conditions. Recall that prior to beginning the task, we had asked participants to complete the goal activation log to establish a baseline for each goal. (See table 2.2 for a summary of all goal activation results.) Using repeated measures analysis, the interaction between baseline goal activation and condition was not significant, Wilks' $\Lambda = .99$, $F(3, 202) = .852$, $p = .47$, partial $\eta^2 = .01$. We found there were no differences in the baseline goal activation measures between conditions: prioritize options ($p = .72$), seek consistency ($p = .19$), avoid negative feelings ($p = .77$), and maximization ($p = .43$).

To capture the change in goal activations as a function of condition (i.e., no-contraction vs. contraction), we took the difference between the initial baseline goal measures for each of the goals and the goal activations reported after participants knew they would have to make a second allocation decision. Repeated measures analysis revealed a significant difference for the change in activation across goals (Wilks' $\Lambda = .65$, $F(3, 202) = 35.98$, $p < .001$, partial $\eta^2 = .35$) and a significant interaction with condition (Wilks' $\Lambda = .96$, $F(3, 202) = 3.07$, $p = .03$, partial $\eta^2 = .04$). As expected, the change in goal activation, created by subtracting the second goal activation measure from the

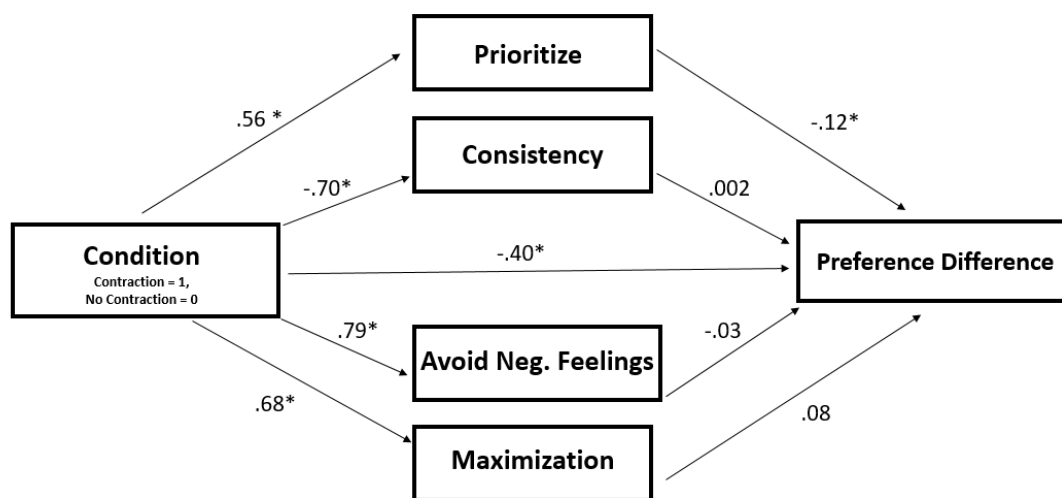
baseline, was significantly higher for the prioritize goal in the contraction condition compared to the no contraction ($p = .03$). The other goals also showed differences between conditions from baseline: seek consistency ($p = .09$), avoid negative feelings ($p = .05$), and maximization ($p = .02$). (See table 2.2 for the specific goal activations across time and condition.) The final goal activation log showed no differences between conditions for any of the goals: prioritize options ($p = .23$), seek consistency ($p = .19$), avoid negative feelings ($p = .23$), and maximization ($p = .18$).

Table 2.2
Summary Goal Activations (0-10 scale)

Baseline		21-21-21	21-7-21	<i>p</i> -value
	Prioritize Options	7.85	7.77	0.72
	Seek Consistency	5.69	6.12	0.19
	Avoid Negative Feelings	6.89	6.80	0.77
	Maximization	7.88	8.10	0.43
Middle (Contraction)				
	Prioritize Options	8.38	8.85	0.04
	Seek Consistency	4.45	4.18	0.50
	Avoid Negative Feelings	5.79	6.48	0.10
	Maximization	7.55	8.45	0.01
Middle Minus Baseline				
	Prioritize Options	0.52	1.09	0.03
	Seek Consistency	-1.24	-1.94	0.09
	Avoid Negative Feelings	-1.11	-0.32	0.05
	Maximization	-0.33	0.35	0.02
Final				
	Prioritize Options	8.18	8.5	0.23
	Seek Consistency	5.14	5.69	0.19
	Avoid Negative Feelings	6.02	6.52	0.23
	Maximization	7.73	8.18	0.18

Finally, we predicted that the prioritize options goal would be the key driver of the preference refinement effect and mediate the relationship between condition and the mean preference difference. We included all four goals in a parallel mediation model, however, we expected only the goal to prioritize to be a significant mediator. Specifically, we used the difference between the baseline and middle goal activation for all four goals as parallel mediators and the preference difference (X_D) as the dependent measure. A mediation analysis was conducted with the PROCESS macro for SPSS (Model 4) with 5,000 bootstrapped samples. The prioritize options goal was the only significant mediator in the model, $b = -0.07$, $SE = 0.05$, $90\% CI = [-0.1589, -0.0020]$. In the contraction condition, prioritizing options led to greater preference refinement. Figure 2.1 illustrates the mediation results.

Figure 2.1
Study 5 Mediation



There is a **significant indirect effect** of contraction on the preference difference through **prioritization only** ($b = -0.07$, $SE = .05$, $BC\ 90\% CI [-0.16, -0.0020]$). All other paths ns.

* $p < .10$

2.15.3 Discussion

The results of study 5 suggest that a budget contraction leads individuals to prioritize options, which in turn leads to the preference refinement effect. While the goals of consistency, avoiding negative emotion, and maximization had significant increases in activation during the contraction, only the goal of prioritization mediated the preference difference.

2.16 Study 6: Evidence of Preference Refinement During the U.S. Government Shutdown

Thus far, our studies have leaned heavily on experimental studies where we have given people a context and asked them to spend budgets of varying amounts. To lend real world support to the preference refinement effect, we conducted a longitudinal study during the U.S. government shutdown that occurred from December 22, 2018 through January 25, 2019. In three waves, we asked government workers about their personal budgets and the allocations they were making to different categories of spending. We predicted that those directly affected by the shutdown (i.e., those not receiving a paycheck) would exhibit the preference refinement effect because they were experiencing a true contraction.

2.16.1 Method

United States government workers were recruited on Amazon Mechanical Turk and paid a small fee in exchange for participating. One hundred twenty-five participants started the first wave; at the conclusion, thirty-six participants remained (49% female; median age = 37). We asked, as a screening question, whether participants were financially affected by the government shutdown with a focus on those who were affected because they were experiencing the loss (see Appendix 1 for additional analyses). The first wave (1) was conducted during the shutdown (January 12th). The second wave (2) with the same participants was conducted approximately two weeks later (January 25th) and before the announcement that the shutdown was over. The final wave (3) with the same participants was launched after back pay was received by government workers (February 5th).

In order to determine typical allocation categories, in wave 1, we asked participants in an open-ended question format what types of items they were spending money on prior to the shutdown and what they had been cutting from their budget as a result of the shutdown. We took the results of that data as a benchmark to use for the second wave. During wave 2, we asked participants to think back to before the shutdown and allocate their monthly budget to categories of spending (e.g., entertainment, eating out, childcare, food at the grocery store). Next, we asked participants to take that budget and determine what proportion of the original budgeted amount they were currently spending (i.e., during the shutdown). These two questions serve as the first and middle allocations, respectively. In the final wave, after the shutdown had ended and participants

had received their back pay, we again asked the same participants to allocate their monthly budget to categories of spending now that the shutdown had ended. This served as our final allocation. We counted the number of categories participants allocated some money to at each time point to use in our analysis.

2.16.2 Results

For each budget allocation (i.e., the retrospective measure of the categories of spending before, the real-time measures of categories during the shutdown (i.e., the contraction), and the categories of spending real-time post-shutdown with a restored budget), we counted the number of categories participants allocated their monthly budget to. Overall, the analysis revealed that allocation time point was significant, Wilks' $\Lambda = .56$, $F(2, 34) = 13.15$, $p < .001$, partial $\eta^2 = .44$. Follow-up contrasts revealed that the mean number of categories in the pre-government shutdown budget allocation was significantly larger ($M = 10.22$, $SD = 3.33$) than the post-back pay allocation ($M = 8.75$, $SD = 3.28$) ($p = .008$). The contraction allocation was 8.08 ($SD = 3.58$), reflecting that some categories of spending were essential despite not having an income from the government during this time. The contraction and final allocations were not significantly different from each other ($p = .24$). Overall, we see evidence of the preference refinement effect in a real contraction situation, where people were working with their own budgets.

2.16.3 Discussion

This study provides real world evidence of the preference refinement effect. During the temporary government shutdown, workers who experienced the contraction exhibited the preference refinement effect. The preference restructuring that took place during the shutdown for those government workers experiencing a contraction persisted even when the income was restored.

2.17 General Discussion

In the current work, we ask what, if anything, happens to consumers' preferences as a result of coping with a budget contraction. We explore this question by comparing pre-contraction allocations against post-contraction allocations of the same budget to the same set of alternatives (i.e., when the budget has been restored). We find that managing a budget contraction causes consumers to prioritize what they value and alters their preference structure, relative to those who did not cope with a budget contraction. The process of prioritization leads to post-contraction allocation sets that are narrower, an effect we refer to as preference refinement. The preference refinement effect was observed when consumers faced contracting time, space, and money budgets (see studies 1A-1D and the follow-up). We also found the effect to be stronger when the budget contraction was more extreme and when one had to determine where to make the cuts as opposed to simply executing another's decision (see studies 2A and 2B). The preference refinement effect persisted after a two-day delay, suggesting that changes to the

preference structure endure (study 3). In study 4, we found these refined preferences carried over to a new choice context. In study 5, we showed that the goal of prioritization (i.e., the desire to prioritize) during a contraction mediated the preference refinement effect. Finally, study 6, during the 2019 U.S. government shutdown, provided a real-world test of our preference refinement effect.

Since the early work on context effects gave rise to the idea of constructed preferences, a number of questions have lingered in the literature, including: what is a constructed preference?, are constructed preferences stable?, how do consumers move from constructed to stable preferences?, and can stable preferences revert to unstable ones? These are some of the most difficult-to-answer questions in our field because they sit at the intersection of psychology and economics, descriptive models and prescriptive models, and behavioral and quantitative methods. Nevertheless, we do know some things. We know, for example, that consumers are adept at transforming a weak leaning for one alternative into a preference strong enough to support selection of the alternative by means of a variety of preference structuring activities, including separation, distortion, and selective attention processes (Brownstein 2003). We also know that consumers defend their strongly preferred brands with gusto. What is missing is a comprehensive understanding of how constructed preferences grow into stable preferences, and how loyalty to a product or brand solidifies over time. In the terms we have used here, what is missing is a comprehensive understanding of how preference stabilization begins and is realized.

The findings we have reported above start to speak to this process - the early stage of preference stabilization – when consumers are forced, due to a budget contraction, to

prioritize what they value as they progress toward consistent choices over time. We believe the choices our participants made under the initial, pre-contraction budget were based on a mix of inherent preferences and constructed preferences (Simonson 2008), and that a budget contraction nudged our participants toward preference restructuring and stabilization by way of prioritization (Fernbach et al. 2015). Though it would be overreaching to claim that coping with a budget contraction is either necessary or sufficient to produce stable preferences, our evidence indicates that dealing with a budget contraction is sufficient to *begin* the preference stabilization process. That said, we do not believe that a budget contraction is the only way this process can begin. There is evidence that making difficult choices can begin the process (Hoeffler and Ariely 1999), that contemplating multiple attribute levels across various attributes can also initiate the process (Carlson and Pearo 2004), and that early experiences (Hoeffler et al. 2006) can also help consumers begin to formulate stable preferences.

In addition to contributing to the scaffolding on which comprehensive answers to the above questions might be found, we identify an approach for assessing when preference stabilization has begun – namely, a repeated measures examination of a consumer allocating the same budget to the same alternatives over time. When preferences revealed under this approach – where the conditions of choice, the budget, and the alternatives were held constant – tend toward a narrower set of alternatives, we can infer that preference refinement and stabilization has occurred. There is much that is still unknown about the earliest part of the preference stabilization process, but the current work takes an important step in contributing to the scaffolding from which future insights should emerge.

Practically, the studies above reveal that consumers in the real world who experience budget contractions are at a critical inflection point. That is, they are at a point where self-discovery is imminent. Importantly, we did not introduce persuasion attempts during this inflection point. Rather, we allowed participants to navigate how they wished to cope with the budget contraction on their own, without intervening during the process. Though we did not directly test the impact of marketing interventions during a budget contraction, we can think of several potential opportunities that might arise for marketers when consumers experience such a contraction.

Our work suggests that marketers should work hard to retain those consumers who are financially distressed, time distressed, or space distressed due to a budget shock to their normal way of life. This time of loss changes the consumer; they may be more open to sticking with a brand that helps them through the tough times. The introduction of special promotions that could ease the cost of retaining more options during these periods (i.e., making the cut appear more modest than extreme) is one obvious option. To the extent that marketers can find ways to remove the need for consumers to cope with the loss, they also may be able to allay the preference refinement process. Providing opportunities for consumers to rent the option during the contraction period, or to provide sweat equity and/or barter for access in some product categories may also be feasible. This leads to the more general suggestion that brand relationships should be reinforced during economic downturns to prevent the marketer's brand from being cut permanently. If the brand ends up being cut during the contraction, it is not clear that consumers will re-introduce it when the budget is restored. As such, it may be critical to re-introduce the

brand and re-invigorate its presence during this post-contraction phase to remind the consumer why the brand is necessary.

The current work starts the conversation about the role of contractions on preference stabilization, but there are a number of open questions that remain. The frequency and timing of contractions and restorations is such an area. When contractions and expansions are frequent, we assume that preferences will stabilize more rapidly, but this is an open question. Each additional round of contraction and restoration may heighten the salience of the loss and encourage consumers to engage in more risk taking if sadness results (Garvey, Meloy, and Shiv 2017; Raghunathan and Pham 1999).

In our studies, we examine how consumers cope with a contracted budget, rather than focusing on how the re-expanded budget is perceived. For example, will consumers respond similarly when the time between the budget contraction and re-expansion is longer? It stands to reason that the longer the contraction goes on, the more it becomes less of a contraction and more the status quo. Therefore, an expansion may not feel like a restoration, but rather a new budget all together. We again assume that the preference refinement and stabilization that occurs during the contraction will remain, despite the length of time to restoration, but this is again, an open question.

While our survey during the government shutdown was longitudinal in nature, future research could delve further into important past events that have led to economic contractions and try to segment consumers who have responded similarly when the economy has recovered. Though our within-person studies suggest that the preference refinement effect is robust and lasting, we acknowledge that there could be some segments of consumers for whom reactance is more prevalent following an economic

downturn and subsequent recovery. Similarly, it would be useful to know, for segmentation purposes, if individuals with similar backgrounds but different past experiences with income fluctuations respond differently.

In the studies above, though we included hypothetical and consequential choices, we did not allow our participants to experience the full consequences of their choices within the study. That is, though we examined whether the effects of coping with a contraction persisted for a longer duration of time, we did not study this in choices embedded inside actual consumption episodes (e.g., participants did not eat the candy between allocations in the consequential choice study (1D)). In study 4, we did, however, measure satisfaction with the final allocation and satisfaction was higher in the group that experienced the contraction relative to the no-contraction condition. Does loss not only stabilize our preferences but also make us more grateful and positively affect satisfaction? Including actual consumption and examining the downstream consequences of preference refinement on satisfaction would be an interesting avenue for future research. Additionally, observing how changes in the set of options post-contraction (e.g., expanding the set of options) affects preference refinement would be curious.

From a more managerial perspective, there are a number of interesting avenues for future research that take the preference refinement effect as the starting point. The possibility of alternative mechanisms for sustaining consumption in the budget categories that would likely be cut during an economic downturn is an interesting avenue for future research. The possibility of renting items (instead of buying) or bartering sweat equity for access could reduce the possibility of the brand being cut during the contraction, but it may undermine the brand equity of the product when the economy recovers. This is

something firms may wish to consider as they attempt to woo consumers into retaining their brands during these periods of hardship.

Finally, we did not allow our participants to save any part of their budget. In a world where saving is possible, some people will save and others will not; those who do save should not need to prioritize as much because the impact of the budget contraction will be dampened by dipping into these reserves. This raises the interesting idea that the minority of people that do tend to save may be the most averse to the prioritization process and the least likely to exhibit preference refinement. This is a direction for future research.

In sum, there is still much to discover surrounding the preference refinement effect including not only theoretical extensions but managerial implications as well. The current work is a clear foundation on which to start this discovery process and from which rich streams of future research should emerge.

2.18 Essay 1 Appendices

2.18.1 Appendix 1: Ancillary Analyses

Study 1A:

We conducted further analysis of the specific allocation of days to cities, investigating whether preferences are magnified throughout the allocation process. In order to determine this, we identified the city that received the highest share of days in the contraction condition for each participant. We then subtracted the number of days this particular city received in the initial allocation from the number of days it received in the final allocation. If the number of days increased, we would consider this a magnification of preference. We found that 15% of the participants increased their share compared with 70% who stayed the same (15% decreased their share). Therefore, we see no evidence of preference magnification throughout the allocation process.

We also examined the possibility of magnified preferences by identifying the most liked city (i.e., the city with the greatest share of days allocated) in the initial allocation by participant. We subtracted the initial allocation from the third allocation of days to this same city. Only 5% of the participants exhibited an increase while 69% remained the same (26% decreased). Based on these two analyses, we conclude that magnification of preference cannot explain the preference refinement effect.

Study 1D:

We examined the PANAS. It revealed that none of the individual emotions were significantly related to the magnitude of the preference difference (all $ps > .07$). Two negative emotions (jittery and scared) were marginally significantly related to the mean difference. The correlations are relatively low between jittery and the mean difference (-.136) as well as scared and the mean difference (-.126). Those who were higher in these arousal emotions refined more. However, the overall negative PANAS was not significantly related to the magnitude of the preference difference ($p > .50$). Finally, we examined a subset of the negative emotions, eliminating those emotions that seemed less relevant to a budget contraction (e.g., guilty, ashamed) and again the mean difference was not related ($p = .88$). Positive PANAS also was unrelated to the preference difference ($p = .85$).

Follow-up to Study 1:

Method. Female students ($n = 102$; median age = 18) at a large university in the U.S. participated in the study and were given course extra credit in exchange for their participation. Only females were recruited as the scenario involved packing a make-up bag for a trip. Participants were randomly assigned to either a no contraction or a contraction condition. All participants were instructed to imagine they were going on a trip and would be packing a make-up bag. Toiletry items, such as a toothbrush and toothpaste, would go in a separate bag. The 25 items listed as currently in their make-up bag (i.e., they owned all the items) were those typically used by females such as lip gloss, foundation, eyeliner, and mascara. That is, all females, in both conditions, began the process with a make-up bag that contained the exact same 25 items.

Next, participants in both conditions learned that they had purchased a new, leak-proof make-up travel bag for the trip. In the no contraction condition, participants decided which of the 25 items from the original make-up bag they would put in the new travel bag, without any restriction on how many items they could take. Participants were permitted to remove items from the bag as they moved from space to space using the drag and drop feature in Qualtrics. In the contraction condition, participants learned that their new make-up bag could only accommodate eight of the original 25 items. Participants also used the drag and drop feature in Qualtrics to indicate which items, a maximum of eight, they wished to move to the new bag. Finally, participants in both conditions were told that their mother had sent them a new make-up bag that not only would fit all 25 items from their original make-up bag, but also would take up less space in their suitcase. In both conditions, participants allocated items to the new Mom-provided make-up bag

without any quantity control. They could take as many or as few items as they wished. After making the final allocation, participants reported whether they found the decision-making process informative using three items.

Results. Recall that both conditions started with the same endowment of 25 items. Thus, we were not able to calculate a mean preference difference in this study. Instead, we compared the final number of items selected for inclusion in the Mom-provided make-up bag across conditions. The mean number of items in the contraction condition was 13.94 (SD = 3.45), a number significantly lower than the no contraction condition 16.66 (SD = 4.68), $F(1, 100) = 11.19, p = .001$. The mean number of items selected for inclusion in the middle allocation was 15.48 (SD = 4.63) for the no contraction condition and 7.98 (SD = .14) in the contraction condition. Evidence that the final bag contained fewer items after experiencing a contraction (relative to no contraction) shows that the preference refinement effect generalizes to settings where all consumers begin with the same set and where there were no quantity controls (i.e., they were permitted to reduce or expand as they wished), subject to the permissible maximum budget.

We were also interested in whether individuals in the contraction condition believed the process facilitated learning about their preferences. On a 1 to 7 scale, participants rated whether the process was a) pointless vs. a learning experience, b) a useless vs. helpful experience, and c) uninformative vs. informative experience. The items were reverse coded and then averaged together to get a single measure ($\alpha = .932$), with a higher number indicating a more informative experience. There was a significant difference between conditions. Self-reported learning in the contraction condition was higher ($M = 4.19, SD = 1.87$) than in the no contraction condition ($M = 3.37, SD = 1.79$) ($F(1, 99) = 5.01, p = .028$). Respondents who were required to eliminate items from the make-up bag learned more about themselves than those who simply moved items from space to space.

Study 2B:

We performed additional analysis to ensure that the three cities chosen in the other-determined condition were indeed seen as the most popular in this study. For each individual, we determined whether Amsterdam, London, and Paris were part of their top three choice based on days allocated to the city. We then re-ran our analysis including only those that were a perfect match (i.e., all three cities selected as a top choice), a good match (i.e., two of the cities selected as top choice), and a poor match (i.e., only one of the cities was selected as top choice). In all cases, we find a replication of our finding (see Table 2.3); the preference refinement effect is seen in the self-determined condition but not in the other-determined.

Table 2.3

Top Three City Analysis Results

		Number of participants	First Allocation	Middle Allocation	Final Allocation	Pairwise Comparison p- value (First vs. Final Allocation)
All Participants	Self-Determined	113	8.73 (2.56)	4.27 (1.64)	8.37 (2.64)	0.01
	Other-Determined	106	9.00 (2.47)	3.00 (0)	9.22 (2.48)	0.14
Perfect Match	Self-Determined	113	8.73 (2.56)	4.27 (1.64)	8.37 (2.64)	0.02
	Other-Determined	39	10.08 (2.13)	3.00 (0)	10.26 (2.22)	0.48
Good Match	Self-Determined	113	8.73 (2.56)	4.27 (1.64)	8.37 (2.64)	0.02
	Other-Determined	45	8.69 (2.38)	3.00 (0)	8.64 (2.30)	0.85
Poor Match	Self-Determined	113	8.73 (2.56)	4.27 (1.64)	8.37 (2.64)	0.03
	Other-Determined	19	7.95 (1.90)	3.00 (0)	8.89 (2.11)	0.02

Study 3:

We believe that the results of this study not only establish that the preference refinement effect is lasting, but they also help us rule out two alternative explanations for the findings – anchoring and under-adjustment as well as consistency/dissonance reduction. First, we believe that a two-day gap between the initial study and the follow-up allocation (X_4) should clear pressures towards consistency and memory for anchors. That said, suppose participants did recall their allocation across the 12 cities. If we consider the full process, start to finish, when individuals made the initial allocation, it became the reference point (i.e., the truth). This is presumably how someone would allocate without constraints. If anchoring were occurring, then as the individual moved from the initial anchor value, to the new “anchor” during the contraction, and then back to the restored budget (i.e., old anchor value), the mean number of cities chosen should tend towards the initial allocation mean but stop just short.

In this study, the initial allocation (X_1) mean is 8.76 and the final allocation (X_3) mean is 8.43. This follows an anchoring explanation. But we also measure allocation variety a fourth time (X_4). Here the most salient anchor is X_3 but “truth” remains X_1 . This suggests that if anchoring and under-adjustment were occurring, the mean number of cities in X_4 would be higher than 8.43 (X_3) but lower than 8.76 (X_1). However, X_4 is 8.30, which is lower than the salient anchor value of X_3 , rendering the anchoring explanation unable to account for the fourth allocation value.

The argument against consistency and reduction of cognitive dissonance follows a similar line of thought. As with the anchoring alternative explanation, the desire to be consistent should lead the mean value to be between X_1 and X_3 . Again, this was not the

case. Based on the full pattern of results, preference refinement is the most parsimonious explanation of the three.

Follow-up study ruling out anchoring:

A two group experiment was conducted sequentially to further help dispel the anchoring explanation. The domain we used was cities (study 1A) and time allocated for travel. With Group 1 (Contraction Re-Expansion), we replicated the design and findings from our previous studies by giving participants a standard allocation of time across cities task (i.e., 21-7-21). Next, Group 2 (Simple Expansion) started with the same allocation variety as Group 1's 7 day allocation. We then informed participants that their time allocation had expanded to 21 days (i.e., 7-21). Thus, Group 2 should not feel that they are losing anything, given that they are only expanding. Further, we are holding the number of days as well as the number of cities constant to help rule out anchoring.

Group 1 Method and Results. One hundred fifty participants (44% female; median age = 36) were drawn from Amazon's Mechanical Turk. They were paid a small amount for their participation. The same method and stimuli were used from study 1A.

The results replicated those in the previous studies. The first 21-day allocation was higher ($M = 8.46$, $SD = 3.17$) compared to the second 21-day allocation ($M = 8.15$, $SD = 3.25$). The mean difference was significantly greater than zero ($M = -0.31$, $SD = 1.67$; $t(149) = -2.24$, $p = .03$). The mean number of cities chosen by Group 1 in the 7-day contractionary period was 3.67 cities ($SD = 1.73$). This mean value was subsequently used as Group 2's starting point.

Group 2 Method and Results. One hundred forty-five participants (52% female, median age = 36) were used from Amazon's Mechanical Turk. The same method and similar stimuli as in Group 1 were used, with one exception: participants were asked to indicate exactly 3 or 4 cities (of the 12 available) they would visit during a 7-day stay. Because Group 2 was a simple expansion group, participants' initial allocation was for a 7-day trip. They were told they had to choose exactly 3 or 4 cities to allocate time to. Participants were randomly assigned to one of three conditions in Group 2—one 3 city condition and two 4 city conditions were deployed in order to approximate the mean of 3.67.

By design, the mean in Group 2 for the 7-day city allocation was 3.67 cities ($SD = .47$). The mean for the 21 day allocation simple expansion was 8.87 ($SD = 2.98$), a number significantly larger than the Group 1 mean ($M = 8.15$, $SD = 3.25$) in the re-expanded 21-day allocation ($t(293) = 1.98$, $p = .05$). Despite starting at the same allocation (3.67 cities across 7 days), individuals in the contraction re-expansion ended with less allocation variety than those who were in the simple expansion group. The evidence suggests that anchoring is not the driving force for the preference refinement effect.

Study 6:

In addition to surveying those government workers that were directly affected by the shutdown (i.e., those not receiving a paycheck), we also surveyed those who were

indirectly affected (i.e., those working for the government and receiving a paycheck). We included the analysis for both groups together in this appendix.

One hundred ninety-three participants started in the first wave (those directly and indirectly affected); at the conclusion, sixty-three participants remained (52% female; median age = 35). Overall, the analysis revealed that allocation time point was significant, Wilks' $\Lambda = .68$, $F(2, 60) = 13.98$, $p < .001$, partial $\eta^2 = .32$, as well as the interaction between allocation and whether the participant was affected indirectly or directly by the government shutdown, Wilks' $\Lambda = .86$, $F(2, 60) = 4.87$, $p = .01$, partial $\eta^2 = .14$. Follow-up contrasts showed that for those indirectly affected (i.e., not financially), there were no significant preference difference across allocations ($M_1 = 8.63$, $SD_1 = 3.07$; $M_2 = 8.15$, $SD_2 = 3.24$; $M_3 = 7.81$, $SD_3 = 2.84$; all $ps > 0.13$). In the directly (i.e., financially) affected condition, however, there was a significant preference difference. The mean number of categories in the pre-government shutdown budget allocation was significantly larger ($M = 10.22$, $SD = 3.33$) than the post-back pay allocation ($M = 8.75$, $SD = 3.28$) ($p = .003$) as reported in the main text.

Because we wanted to make sure we were capturing evidence of preference refinement during the government shutdown, in each wave, we also asked participants if they thought they would [had] revert[ed] back to their old level of spending (1 = Definitely Not, 7 = Definitely Yes) when [now that] the government [had] re-opened. Overall, the analysis revealed that reverting to old spending at each time point was significantly different, Wilks' $\Lambda = .82$, $F(2, 59) = 6.66$, $p = .002$, partial $\eta^2 = .18$. The interaction between reverting and whether affected indirectly or directly by the government shutdown was marginally significant, Wilks' $\Lambda = .91$, $F(2, 59) = 2.86$, $p = .065$, partial $\eta^2 = .09$. Follow-up contrasts showed that those indirectly affected (i.e., not financially), demonstrated no significant differences across waves on reverting back to old spending patterns ($M_1 = 4.96$, $SD_1 = 1.56$; $M_2 = 4.78$, $SD_2 = 1.65$; $M_3 = 4.67$, $SD_3 = 1.64$; all $ps > 0.38$). In the directly (i.e., financially) affected condition, however, there was a significant difference on reverting back to old way of spending (a lower number indicates a lower likelihood of returning to old spending patterns). The average in the first phase was significantly larger ($M = 4.71$, $SD = 1.56$) than the final phase ($M = 3.34$, $SD = 1.45$) ($p < .001$). The second phase ($M = 4.29$, $SD = 1.66$) was not significantly different from the first phase ($p = .12$), but was significantly different from the third ($p = .003$). Therefore, upon re-expansion, individuals became less likely to revert back to their old way of spending (i.e., their spending before the government shutdown).

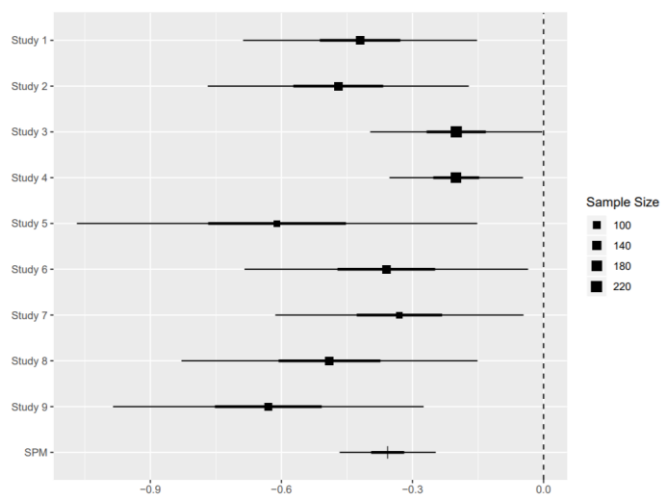
Single Paper Meta-Analysis:

To demonstrate the robustness of our effect, a single paper meta-analysis (SPM) (McShane and Böckenholt 2017) was performed for all lab studies including a contraction condition. The studies included in this SPM were studies 1A-1D, study 2A (extreme condition only), study 2B (self-determined condition only), study 3 (initial study only), study 4 (contraction condition only), and study 5 (contraction condition only). We used the mean difference for the analysis to control for the variability across studies given the different contexts (i.e., cities, vegetables) as well the different options available to choose from (i.e., 12 cities vs. 10 cities). SPM estimates the effect at $-.36$

(95% CI: -0.47, -0.25) demonstrating that fewer categories receive an allocation after coping with a budget contraction. I^2 was estimated at 25.81% (95% CI: 0% - 65.27%). Below, please find the plot. (Please note that the study numbers on the plot below match the order of studies in the paper but not the study numbers. For example, study 1 on the plot corresponds with study 1A in the paper, study 2 on the plot corresponds with study 1B in the paper, etc.)

Figure 2.2

SPM Results



2.18.2 Appendix 2: Study Stimuli

Study 1A - Time

Suppose that you and a friend have decided to go on a three-week trip to Europe. You have never been to Europe so this is a BIG deal. Please indicate how you would allocate your 21 days of travel across the cities below, based on your preferences. Note that to visit a city, you must allocate at least one day to that city.

- _____ Amsterdam
- _____ Lisbon
- _____ London
- _____ Madrid
- _____ Marseilles
- _____ Milan
- _____ Munich
- _____ Naples
- _____ Paris
- _____ Prague

_____ Rome
 _____ Vienna

[Filler task]

Oh no! Your best friend's sister is getting married this summer and your friend can now only travel with you for one week due to timing of the wedding. You do not want to travel by yourself. You decide to reduce your travel to just one week. Indicate how you would allocate your 7 days of travel across the cities below, based on your preferences. Note that to visit a city, you must allocate at least one day to that city.

[Allocation task]

Good news! You have another friend who will join you in Europe after your best friend leaves for the wedding. You can again travel the full three weeks. Indicate how you would allocate your 21 days of travel across the cities below, based on your preferences. Note that to visit a city, you must allocate at least one day to that city.

[Allocation task]

[Filler task]

[Demographic Questions]

Study 1B - Space

Suppose that you and a friend have decided to plant a garden to save money on food over the summer and into the fall. Based on the Community Garden Program, you are going to plant a plot that has space for 21 rows of vegetables. Assume that you can plant only one vegetable in any given row. For each of the following vegetables, please indicate how you would like to allocate your space to that crop. Remember, you may only plant one vegetable per row. Please indicate how you would allocate your 21 rows across the vegetables listed.

_____ Kale
 _____ Peppers
 _____ Green beans
 _____ Zucchini
 _____ Tomatoes
 _____ Cucumbers
 _____ Spinach
 _____ Broccoli
 _____ Brussels Sprouts
 _____ Melons
 _____ Leaf Lettuce

_____ Cabbage

[Filler task]

Oh no! You and your friend are a bit delayed in committing to the garden idea, and by the time you go back to the Community Garden Program, other people had already taken up more of the total space. The program can now only give you 7 rows of space for your vegetables. How will you allocate your 7 rows? For each of the following vegetables, please indicate how you would like to allocate your space to that crop. Remember, you may only plant one vegetable per row. Please indicate how you would allocate your 7 rows across the vegetables listed.

[Allocation task]

[Filler task]

Good news! The director of the Community Garden Program just contacted you. They have received additional land and they can give you a plot that can accommodate the full 21 rows of vegetables you initially requested. How will you now allocate your 21 rows? For each of the following vegetables, please indicate how you would like to allocate your space to that crop. Remember, you may only plant one vegetable per row. Please indicate how you would allocate your 21 rows across the vegetables listed.

[Allocation task]

[Demographic Questions]

Read each statement below, and indicate to what extent it describes you (1 = Completely disagree, 7 = Completely agree).

- When I watch TV, I channel surf, often scanning through the available options even while attempting to watch one program.
- When I am in the car listening to the radio, I often check other stations to see if something better is playing, even if I'm relatively satisfied with what I'm listening to.
- I treat relationships like clothing: I expect to try a lot on before I get the perfect fit.
- No matter how satisfied I am with my job, it's only right for me to be on the lookout for better opportunities.
- I often fantasize about living in ways that are quite different from my actual life.
- I'm a big fan of lists that attempt to rank things (the best movies, the best singers, the best athletes, the best novels, etc.).
- I often find it difficult to shop for a gift for a friend.
- When shopping, I have a hard time finding clothing that I really love.
- Renting movies is really difficult. I'm always struggling to pick the best one.

- I find that writing is very difficult, even if it's just writing an email to a friend, because it's so hard to word things just right. I often do several drafts of even simple things.
- No matter what I do, I have the highest standards for myself.
- I never settle for second best.
- Whenever I'm faced with a choice, I try to imagine what all the other possibilities are, even ones that aren't present at the moment.

Study 1C - Money

It is time to start thinking about planning your spring break trip! Suppose that you have decided to go on a 4 day cruise in the Bahamas. You have already booked the cruise (which includes the cabin and all meals) and your flight. You still need to decide what shore excursions you would like to add to your trip. You have a budget of \$300 for these extras. The shore excursions are in high demand. Therefore, the cruise line has guests bid on the packages they want. You are awarded the package only if you are one of the top bidders. Please indicate how you would allocate the \$300 across the shore excursions listed below. Indicate the DOLLAR value in the box. For example, if you want to bid \$50 on a package, you would type 50.

- _____ Adventure Yacht Turtle and Reef Snorkel
- _____ An Evening of Rum and Reggae
- _____ Bahama Royal Blue Golf (18 Holes)
- _____ Kayak Adventure
- _____ VIP Beach Cabana with Lunch (for 2 guests)
- _____ Swim with the Dolphins on Blue Lagoon Island
- _____ Eco Nature Walking Tour
- _____ Blue Lagoon Island via Segway and Beach Day
- _____ Certified Scuba Dive
- _____ Guided Tour of Marine Life aquarium
- _____ Sightseeing Tour of Nassau in Jeep
- _____ Deep Sea Fishing Adventure
- _____ Full Day Beach Bungalow Rental
- _____ Parasail Adventure Tour
- _____ All Day Relaxing Spa Getaway

You work full-time at a local store. Unfortunately the store is having a bad year. They will be keeping all full and part time employees on staff. In order to do that though, everyone will have their pay permanently [temporarily] cut. Your boss tells you that your monthly pay will be reduced 25%. It is unclear if your pay will ever return to its previous level [Your boss says your pay will return to its previous level in the near future].

Given the news from your boss, you now only have \$100 to spend on shore excursions. You don't have any money in savings you could use for the trip.

Please indicate how you would allocate the \$100 across the shore excursions listed below. Indicate the DOLLAR value in the box. For example, if you want to bid \$50 on a package, you would type 50.

[Allocation task]

Good news! The store was able to add a large client. Your pay is going back to its original level. You can again spend \$300 on shore excursions. Please indicate how you would allocate the \$300 across the shore excursions listed below. Indicate the DOLLAR value in the box. For example, if you want to bid \$50 on a package, you would type 50.

[Allocation task]

[Demographic Questions]

Study 1D – Consequential Choice

Real Choice

In this part, you will be asked to engage in a decision making task. As part of the task you will be asked to read a scenario motivating the decision. In exchange for performing well on the task, you will be awarded 21 tokens. The 21 tokens can be exchanged for different types of Easter candy. In order to better make your candy choice, please recall the candies you observed on your way in. If you need a reminder, please let the research assistant know. Please click the next button when are ready.

If you perform well on the decision-making task to follow, you will be awarded 21 tokens. These tokens can be exchanged for different Easter candies, which you will actually receive at the completion of this survey. Each candy costs a different token amount, which is listed next to each candy type. In the box, please put the number of tokens you would like to allocate to the candy. For example, if you would like 2 Reese's Mini Reester Bunnies, you would put a 6 (2 x 3 Tokens each) in the box. Please indicate how you would allocate your 21 tokens across the Easter candy below, based on your preferences.

- _____ Sour Patch Bunnies- 2 Tokens each
- _____ Hershey's Mini Bunnies- 3 Tokens each
- _____ Reese's Mini Reester Bunnies- 3 Tokens each
- _____ Hershey's Milk Chocolate Eggs- 1 Token each
- _____ Starburst Minis- 2 Tokens each
- _____ Twix Minis- 3 Tokens each
- _____ M&M's Fun Size- 2 Tokens each
- _____ Swedish Fish Treat Size- 2 Tokens each

- _____ Dove Dark Chocolate Eggs- 3 Tokens each
- _____ Hershey's Cookies 'n' Creme Eggs- 1 Token each
- _____ Tootsie Fruit Chews- 1 Token each
- _____ Rolo- 2 Tokens each

You will now proceed to the decision task. Please read the scenario provided and really try to imagine yourself in the position of the individual. And, of course, please read all of the information carefully.

Imagine the following ... Over the last year, the Financial Aid office at your university has been undergoing some policy changes. One of the more important changes is the inclusion of three undergraduate students on the decision making committee responsible for determining the recipients of various financial awards. This is the result of a general university policy to encourage student participation in student-related administrative areas. With a view to instituting this policy change, the Financial Aid and Scholarships Office is currently in the process of screening a number of undergraduates for a spot on the committee. One stage of the screening process consists of a 'role-playing' scenario. You are presented with a scholarship decision with profiles of candidates competing for a scholarship. Your job is to go through and pick the one who is more qualified to receive the award. Since the situations are real cases which the Financial Aid Office has dealt with over the past few years, there is a 'right' decision in each case, or at least one as correct as the experienced and informed judgment of the past financial aid committees. Your choice will be compared to the judgments made by the past committees as a key test of your suitability to fill one of the new undergraduate seats on the scholarship awards committee. The way to earn ALL of your tokens is by selecting the "correct" or more deserving candidate. If you achieve the "correct" answer, you will receive all 21 tokens. There are six kinds of information available on each candidate (note that they have already been pre-screened on financial need): 1. Performance on Exams: 2. Statement of Purpose: Each applicant is required to write an essay outlining his/her long term career goals. 3. Work Experience: 4. Extracurricular Activities: 5. Letters of Recommendation: 6. Personal Interview: Before the applications are sent to the committee, all the applicants are interviewed by the assistant to the dean. You may now proceed to the first piece of information...

Performance on Exams: Candidate L has maintained a college grade point average of 3.85 for the last two years. This candidate had an SAT score of 1920 overall (math, verbal and critical reading) when he or she left high school to enroll at college. Candidate P has an overall GPA of 3.82. The candidate had a total SAT score (math, verbal and critical reading) of 1880 when he or she entered college.

Statement of Purpose: Candidate L received a score of 8 on a 1-10 scale from the English department reader. The note from the Reader says that this candidate did not have a clear long-term career goal. However, this lack did not seem like a weakness because the candidate had a very persuasive argument for keeping his or her options open at this point in time. This argument constituted most of the essay. The overall style of the essay was

informal. Candidate P also received a score of 8 on a 1-10 scale from the Reader. This person had a well-defined long-term career goal. However, it was not easy to discern this from the essay, since it was not very well structured. It was obvious that the candidate had spent a lot of time thinking about the content of the essay, but had not put everything together as a cohesive whole. The overall style of the essay was narrative.

Work Experience Candidate: L has worked full-time for one summer. The candidate's work reflects some degree of maturity. The candidate will be able to pay 15% of total expenses at school with own earnings. Candidate P has worked full-time for two summers. The candidate's work history demonstrates a strong work ethic. The candidate will be able to pay 25% of total expenses at school through employment.

Extracurricular Activities: Candidate L participated in one varsity sport in high school. Athletes are seen as favorable candidates because of the skills they bring as well as the positive personal characteristics that athletics develops. Candidate L also served as an officer for two student organizations in high school. The candidate's leadership of student organizations is an indicator that he or she have the potential to lead, manage and organize. Candidate P participated in two varsity sports in high school. Participation in athletics is valued because it indicates a certain level of personal commitment and it develops an individual skill of working with a team. Candidate P also served as an officer in one of the student organizations in high school. While the actual responsibilities of leading student organization may not be significant, the leadership role that the candidate undertook is nevertheless reflective of some positive personal attributes.

Letters of Recommendation: Candidate L has only two letters of recommendation. (The third letter did not reach the committee on time because the professor in charge of writing it felt sick and could not get it done.) Both of the letters are from professors who have at least five years of teaching experience. They are full of praise for the candidate. One of the professors states that the candidate was intelligent and personable. The other professor states that the candidate, though slightly hesitant to speak up in class, had an impeccable record in the course. The candidate was also socially skilled and energetic. Candidate P has three letters of recommendation. They are all highly complimentary. One of the professors who has taught for a decade, states that Candidate P is a very diligent, hard-working student. Another letter is from a faculty member who is notorious for writing complimentary letters for everyone. She states that the candidate was very enthusiastic and performed very well in her course. However, the candidate seemed to do better on individual projects, as opposed to group projects. The third letter is from a professor with extensive teaching experience. He states that the candidate is a bright individual who asked a lot of intelligent questions in class.

Interview: The associate dean who interviewed Candidate L gave the candidate a rating of 8 on a 1 to 10 scale for maturity and self-awareness. His/Her behavior in the interview left the impression that the candidate was clear and honest in appraising his/her own interests and capabilities. However, the candidate had a tendency to mumble. Candidate L was rated a 6 on the 1 to 10 scale indicating motivation and interest in continued study.

The associate dean who interviewed Candidate P gave the candidate a rating of 7 on the 1 to 10 scale for maturity and self-awareness. The candidate's interview reflected insight into his/her own behavior and their own limitations. Candidate P was rated a 7 on the 1 to 10 indicating motivation and interest in continued study.

After reviewing the information, please indicate which candidate you choose.

Candidate L

Candidate P

Sorry! You made the wrong choice of candidate. Unfortunately, you did not earn the full 21 token reward. Your reward has been reduced to 7 tokens.

Please read each item and then indicate in the space next to that word, on a scale from 1 to 7, where 1 is very slightly or not at all and 7 is extremely, to what extent you feel this way right now, that is, at the present moment.

Interested
 Distressed
 Excited
 Upset
 Strong
 Guilty
 Scared
 Hostile
 Enthusiastic
 Proud
 Irritable
 Alert
 Ashamed
 Inspired
 Nervous
 Determined
 Attentive
 Jittery
 Active
 Afraid

You have now earned just 7 tokens. Please allocate this new token total to the candy below. As a reminder, each candy costs a different token amount, which is listed next to each candy type. In the box, please put the number of tokens you would like to allocate to the candy. For example, if you would like 2 Reese's Mini Reester Bunnies, you would put a 6 (2 x 3 Tokens each) in the box. Please indicate how you would allocate your 7 tokens across the Easter candy below, based on your preferences.

[Allocation task]

Good news! You have an opportunity to re-earn the lost tokens by participating in a second decision task. We are interested in this task to see how students decide between competing internship offers. Pay careful attention. You will now proceed to the next task.

Imagine the following situation. Suppose that you have been looking at various internship opportunities on Simplicity. There are several that have caught your eye and you have applied to those as well as several others. The recruiters are coming in for career fair, but several companies are also coming earlier. You attend as many information sessions as possible, and one company (Firm X) has made you an offer for the summer. It is a good offer, but doesn't have the wow factor of several that you were really excited about and which you have just started to interview for. Unfortunately, the internship offer is exploding – you have one week to decide whether to take it or not, and the firms with other possible internships won't be able to let you know before you have to decide. What will you do?

Please rate how likely you would be to engage in each of the following activities on a scale from 0 (I would never do this) to 9 (definitely sure I would do this).

- Take the offer from Firm X and sign on for the internship you have in hand.
- Call the firm offering you the internship (Firm X) and ask for more time to decide with the hope that the other companies will have completed their interview processes and be able to let you know – you know it won't look good. You recognize that Firm X might take the offer away in favor of a more enthusiastic student.
- Turn down the offer of the internship from Firm X and wait for something better (possibly) to come along.

Good job! You have earned back your tokens! You again have 21 tokens to allocate to Easter candy. On the next screen, you will be asked to allocate your 21 tokens to the candy. This is your FINAL choice so choose wisely. You will receive the candy you choose. On your tabletop, there is a paper order form. First, allocate your candy choices using the electronic method. Next, copy your choices onto the paper order form. This will allow us to fulfill your gift choices.

For your performance on the task, you will now be awarded 21 tokens. As a reminder, each candy costs a different token amount, which is listed next to each candy type. In the box, please put the number of tokens you would like to allocate to the candy. For example, if you would like 2 Reese's Mini Reester Bunnies, you would put a 6 (2 x 3 Tokens each) in the box. Please indicate how you would allocate your 21 tokens across the Easter candy below, based on your preferences.

[Allocation task]

On your tabletop, there is a paper order form. Make sure you copy your choices onto the paper order form. This will allow us to fulfill your gift choices. **MAKE SURE THE TWO**

FORMS (ELECTRONIC AND PAPER) MATCH! Please write the unique code found at the top of your order form in the box below.

Paper Order Form:

Unique Code: _____

If you perform well on the decision making task to follow, you will be awarded 21 tokens. These tokens can be exchanged for different Easter candies, which you will actually receive at the completion of this survey.

Each candy costs a different token amount, which is listed next to each candy type. In the box, please put the number of tokens you would like to allocate to the candy. For example, if you would like 2 Reese's Mini Reester Bunnies, you would put a 6 (2 x 3 Tokens each) in the box.

Please indicate how you would allocate your 21 tokens across the Easter candy below, based on your preferences.

- _____ Sour Patch Bunnies- 2 Tokens each
- _____ Hershey's Mini Bunnies- 3 Tokens each
- _____ Reese's Mini Reester Bunnies- 3 Tokens each
- _____ Hershey's Milk Chocolate Eggs- 1 Token each
- _____ Starburst Minis- 2 Tokens each
- _____ Twix Minis- 3 Tokens each
- _____ M&M's Fun Size- 2 Tokens each
- _____ Swedish Fish Treat Size- 2 Tokens each
- _____ Dove Dark Chocolate Eggs- 3 Tokens each
- _____ Hershey's Cookies 'n' Creme Eggs- 1 Token each
- _____ Tootsie Fruit Chews- 1 Token each
- _____ Rolo- 2 Tokens each

- _____ TOTAL (Must equal 21)

THIS MUST MATCH YOUR ELECTRONIC ORDER!

Please alert the research assistant now that you have completed the paper order form. After the RA takes the order form, please click the next button.

[Demographic Questions]

Hypothetical Choice

In this survey, you will be asked to participate in multiple ongoing tasks. You will be "awarded" tokens for each task completed correctly. You will begin this study with 21 tokens. In the first part, you will be asked to allocate 21 tokens to different types of

Easter candy. We are interested in what people would like to receive in their Easter baskets.

Imagine you have started the tasks with 21 tokens. These tokens can be exchanged for different Easter candies. Each candy costs a different token amount, which is listed next to each candy type. In the box, please put the number of tokens you would like to allocate to the candy. For example, if you would like 2 Reese's Mini Reester Bunnies, you would put a 6 (2 x 3 Tokens each) in the box. Please indicate how you would allocate your 21 tokens across the Easter candy below, based on your preferences.

[Allocation task]
[Decision Task #1]

After reviewing the information, please indicate which candidate you choose.
Candidate L
Candidate P

Sorry! You made the wrong choice of candidate. Unfortunately, you did not earn the full 21 token reward. Your reward has been reduced to 7 tokens.

[PANAS]

Imagine you have now earned just 7 tokens. Please allocate this new token total to the candy below. As a reminder, each candy costs a different token amount, which is listed next to each candy type. In the box, please put the number of tokens you would like to allocate to the candy. For example, if you would like 2 Reese's Mini Reester Bunnies, you would put a 6 (2 x 3 Tokens each) in the box. Please indicate how you would allocate your 7 tokens across the Easter candy below, based on your preferences.

[Allocation task]

Good news! You have an opportunity to re-earn the lost tokens by participating in a second decision task. We are interested in this task to see how students decide between competing internship offers. Pay careful attention. You will now proceed to the next task.

[Decision Task #2]

Good job! You have earned back your tokens! You again have 21 tokens to allocate to Easter candy. On the next screen, you will be asked to allocate your 21 tokens to the candy.

Imagine now that for your performance on the task, you will now be awarded 21 tokens. As a reminder, each candy costs a different token amount, which is listed next to each candy type. In the box, please put the number of tokens you would like to allocate to the candy. For example, if you would like 2 Reese's Mini Reester Bunnies, you would put a 6

(2 x 3 Tokens each) in the box. Please indicate how you would allocate your 21 tokens across the Easter candy below, based on your preferences.

[Allocation task]
[Demographic Questions]

Follow-Up to Study 1

Contraction condition: Imagine you are going on a trip. You are planning to take a make-up bag with you. Assume all your toiletry items will go in a different bag such as toothbrush, toothpaste, hairbrush, and deodorant. The items listed below are what you have in your current make-up bag. The current bag is too large to take on your trip so you bought a smaller bag for the trip that is leak proof.

You must decide which of the 25 items you currently have in your make-up bag you will put in the new travel bag. The new make-up bag will only fit 8 items. Drag the items you wish to take on the trip into the box on the right. Remember, you can only take 8 items.

No Contraction condition: Imagine you are going on a trip. You are planning to take a make-up bag with you. Assume all your toiletry items will go in a different bag such as toothbrush, toothpaste, hairbrush, and deodorant. The items listed below are what you have in your current make-up bag. You bought a new bag for the trip that is leak proof.

You must decide which of the 25 items you currently have in your make-up bag you will put in the new travel bag. The new make-up bag will fit all 25 items. Drag the items you wish to take on the trip into the box on the right. You can take as many or as few as you would like from your original bag.

- _____ Lip gloss 1
- _____ Foundation
- _____ Eye liner
- _____ Mascara
- _____ Eye shadow 1
- _____ Blush
- _____ Eyelash curler
- _____ Chapstick
- _____ Applicator/sponge
- _____ Q-tips
- _____ Makeup brush 1
- _____ Perfume
- _____ Nail polish- clear
- _____ Nail polish- red
- _____ Lip gloss 2
- _____ Eye shadow 2
- _____ Tweezers

- _____ Makeup brush 2
- _____ Band-Aid
- _____ Eye drops
- _____ Nail polish remover
- _____ Hair gel
- _____ Sewing kit
- _____ Moisturizer
- _____ Makeup wipes

Contraction condition: Good news! Your mom sent you a new make-up bag that fits all your make-up items. Even better, it also fits in your suitcase for the trip. You must decide which of the 25 items you have in your original make-up bag you will put in the new travel bag. Drag the items you wish to take on the trip into the box on the right. You can take as many or as few as you would like from your original bag.

No Contraction condition: Good news! Your mom sent you a new make-up bag that fits all your makeup items. It also gives you more room in your suitcase compared to the one you bought. You decide to use the make-up bag your mom sent. You must decide which of the 25 items you currently have in your original make-up bag you will put in the new travel bag. Drag the items you wish to take on the trip into the box on the right. You can take as many or as few as you would like from your original bag.

[Allocation task]

How would describe the decision-making process of allocating items to put in the new makeup bag (the one sent by your Mom)?

	1	2	3	4	5	6	7	
learning experience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	pointless experience
helpful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	useless
informative	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	uninformative

[Demographic Questions]

Study 2A - Strength of Contraction

Suppose that you and a friend have decided to go on a three week trip to Europe. You have never been to Europe so this is a BIG deal. Please indicate how you would allocate

your 21 days of travel across the cities below, based on your preferences. Note that to visit a city, you must allocate at least one day to that city.

_____ Amsterdam
 _____ Lisbon
 _____ London
 _____ Madrid
 _____ Marseilles
 _____ Milan
 _____ Munich
 _____ Naples
 _____ Paris
 _____ Prague
 _____ Rome
 _____ Vienna

[Filler task]

Oh no! Your best friend's sister is getting married this summer and your friend can now only travel with you for two weeks due to timing of the wedding. You do not want to travel by yourself. You decide to reduce your travel to just two [one] week(s).

[Filler task]

Indicate how you would allocate your 14 [7] days of travel across the cities below, based on your preferences. Note that to visit a city, you must allocate at least one day to that city.

[Allocation task]

Good news! You have another friend who will join you in Europe after your best friend leaves for the wedding. You can again travel the full three weeks. Indicate how you would allocate your 21 days of travel across the cities below, based on your preferences. Note that to visit a city, you must allocate at least one day to that city.

[Allocation task]

Which of the cities listed below have you traveled to previously? Select all that apply.

- Rome, Paris, Naples, London, Madrid, Amsterdam, Lisbon, Marseilles, Munich, None of the above

[Demographic Questions]

Study 2B – Self-versus Other- Determined Constraints

Suppose that you and your best friend have decided to take a trip. Both of you decide that three weeks is the ideal amount of time to travel. Please indicate how you would allocate your 21 days of travel across the cities below, based on your preferences. Note that to visit a city, you must allocate at least one day to that city.

_____ Amsterdam
 _____ Lisbon
 _____ London
 _____ Madrid
 _____ Marseilles
 _____ Milan
 _____ Munich
 _____ Naples
 _____ Paris
 _____ Prague
 _____ Rome
 _____ Vienna

Self-determined condition: Oh no! Your friend can no longer travel for the entire three weeks. You must reduce your trip to only one week. Please indicate how you would allocate your 7 days of travel across the cities below, based on your preferences. Note that to visit a city, you must allocate at least one day to that city.

_____ Amsterdam
 _____ Lisbon
 _____ London
 _____ Madrid
 _____ Marseilles
 _____ Milan
 _____ Munich
 _____ Naples
 _____ Paris
 _____ Prague
 _____ Rome
 _____ Vienna

Other-determined condition: Oh no! Your friend can no longer travel for the entire three weeks. You must reduce your trip to only one week. Your friend tells you that she wants to travel now to three specific cities but that you can pick the number of days you stay in each city. Please indicate how you would allocate your 7 days of travel across the cities below, based on your preferences. Note that to visit a city, you must allocate at least one

day to that city. You must allocate at least one day to each city so that you and your friend visit all three cities.

_____ Amsterdam
 _____ London
 _____ Paris

Self-determined condition: Your friend can again travel the full three weeks! Please indicate how you would allocate your 21 days of travel across the cities below, based on your preferences. Note that to visit a city, you must allocate at least one day to that city.

Other-determined condition: Good news! Your friend can again travel the full three weeks! You are no longer constrained to traveling to just three cities. Please indicate how you would allocate your 21 days of travel across the cities below, based on your preferences. Note that to visit a city, you must allocate at least one day to that city.

[Allocation task]
 [Demographic Questions]

Study 3 - The Endurance of Prioritization-Driven Refinement

Suppose that you are an active member of a student organization on campus. The group has decided to go on a three-week road trip to other college campuses with chapters of your respective organization this summer. The road trip will start in Los Angeles. You have decided to go on the trip but are NOT directly involved in the planning. The planning committee must coordinate the number of days everyone will spend in each city, the hotel accommodations, and the planned group activities. The committee sends out an initial survey to everyone to figure out which cities people would like to visit and how many days to spend in each. Please indicate how you would allocate the 21 days of travel across the cities below, based on your preferences. Note that to visit a city, you must allocate at least one day to that city.

_____ San Francisco, CA
 _____ San Diego, CA
 _____ Phoenix, AZ
 _____ Seattle, WA
 _____ Portland, OR
 _____ Denver, CO
 _____ Boulder, CO
 _____ Austin, TX
 _____ Las Vegas, NV
 _____ Dallas, TX

Oh no! Your organization has a required national chapter meeting everyone must attend which means your group can no longer travel for the full 21 days. The committee must

reduce the travel down for the entire group to just 7 days. They send out another survey to get your feedback. Please indicate how you would allocate your 7 days of travel across the cities below, based on your preferences. Note that to visit a city, you must allocate at least one day to that city.

[Allocation task]

[Filler task]

Good news! The meeting was cancelled! Everyone is excited that they can again travel for the 21 days! The committee sends out the survey once again to get your feedback. Please indicate how you would allocate the 21 days of travel across the cities below, based on your preferences. Note that to visit a city, you must allocate at least one day to that city.

[Allocation task]

Of the cities considered, please indicate which you have traveled to previously. Select all cities that apply. If you have never traveled to any of the cities, please just leave this question blank.

- San Francisco, CA; San Diego, CA; Phoenix, AZ; Seattle, WA; Portland, OR; Denver, CO; Boulder, CO; Austin, TX; Las Vegas, NV; Dallas, TX

[Demographic Questions]

Follow-up Survey

Suppose that you are going on a three-week road trip with a student organization starting in Los Angeles. Please indicate how you would allocate your 21 days of travel across the cities below, based on your preferences. Note that to visit a city, you must allocate at least one day to that city.

[Allocation task]

Study 4 - Downstream Consequences of Prioritized Preferences

Suppose that you and your best friend have decided to take a trip to Europe this summer. Both of you decide that three weeks is the ideal amount to travel. Your best friend asks where you want to go. Please indicate how you would allocate your 21 days of travel across the cities below, based on your preferences. Note that to visit a city, you must allocate at least one day to that city.

_____ Amsterdam
 _____ Lisbon
 _____ London
 _____ Madrid

_____ Marseilles
 _____ Milan
 _____ Munich
 _____ Naples
 _____ Paris
 _____ Prague
 _____ Rome
 _____ Vienna

[Filler task]

No Contraction condition: Later that day, you are talking to your mom on the phone about your plans to go to Europe. Your mom asks you where you want to go. Indicate how you would allocate your 21 days of travel across the cities below, based on your preferences. Note that to visit a city, you must allocate at least one day to that city.

Contraction condition: Oh no! Something has come up and now you can only travel for one week. You are talking to your mom on the phone about it and she asks where you want to go. Indicate how you would allocate your 7 days of travel across the cities below, based on your preferences. Note that to visit a city, you must allocate at least one day to that city.

[Allocation task]

[Filler task]

No Contraction condition: You are ready to book the trip. Indicate how you would allocate your 21 days of travel across the cities below, based on your preferences. Note that to visit a city, you must allocate at least one day to that city.

Contraction condition: Good news! The obligation has been resolved. You can again travel the full three weeks. Indicate how you would allocate your 21 days of travel across the cities below, based on your preferences. Note that to visit a city, you must allocate at least one day to that city.

[Allocation task]

Suppose that you are looking through a magazine and see two different travel agency ads offering European vacation packages. The agencies have created different travel packages. Both are 8-day trips, but each trip includes different destinations.

Below is a description of the packages:

Package A is a trip with 2 days in Paris, 2 days in London, 2 days in Marseilles, and 2 days in Lisbon.

Package B is a trip with 2 days in Milan, 2 days in Vienna, 2 days in Munich, and 2 days in Prague.

Which trip do you **want to [not want]** go on? Think about which trip you want to take.

Package A

Package B

How satisfied are you with your final 21-day allocation? (1 = Extremely Dissatisfied, 7 = Extremely Satisfied)

Of the cities considered, please indicate which you have traveled to previously. Select all the cities that apply. If you have never traveled to any of the cities, please just leave this question blank.

- Amsterdam, Lisbon, London, Madrid, Marseilles, Milan, Munich, Naples, Paris, Prague, Rome, Vienna

[Demographic Questions]

Study 5 - Prioritization Motive as the Mediator Between Contraction and Refinement

We are focusing on the goals and thoughts that might run through your mind that influence decision making. When people perform a task like choosing which options they want from a set, their thoughts and actions are driven by the goals and thoughts that they have in their minds as they are processing information. Goals include things like general desires about how to approach and carry out a decision process and the thoughts that arise that accompany those goals.

We'd like you to become familiar with the following goals that may be active when you make a choice: Prioritize Options, Seek Consistency, Avoid Negative Feelings, Maximization.

Most of these goals are used by decision makers to some extent during the process of choosing. Please take a few minutes to read the definitions that follow to ensure that you know what each goal means.

Prioritize Options - The desire to figure out my priorities and select options which most clearly match those priorities, even if this means giving up other attractive options.

Seek Consistency- The desire to be consistent in choices across decisions.

Avoid Negative Feelings- The desire to avoid thoughts, information, or situations that evoke negative feelings.

Maximization- The desire to identify what is generally accepted to be the best option.

To verify that you understand each of the goals, please read the following situations and answer the questions about each goal.

Question 1:

Person A is moving and must decide which books to keep and which books to get rid of. The current bookcase is full. He decides that he'd like to keep a little bit of everything, so he randomly grabs handfuls of books to put in the moving box, and he places the rest in a pile for the AAUW book sale.

Person B is moving and must decide which books to keep and which books to get rid of. The current bookcase is full. He thinks about which genre is his favorite and takes all of the books of that genre out of the bookcase and places them in moving box. He then considers which his second favorite genre is and thinks about whether he wants all of these books. He continues the process, knowing that space is filling up. When he runs out of space, he places the books that won't into the pile for the AAUW book case.

Which individual is likely to be more motivated by the desire to prioritize options?

Person A

Person B

Question 2:

Person A is standing in front of the beverage aisle at the local bottle shop. Last month, she got a good supply of her favorite ciders and beers. Her selection this month has a bit of her favorites as well as some new brands she hasn't tried before.

Person B is standing in front of the beverage aisle at the local bottle shop. Last month, he got a good supply of his favorite ciders and beers. This month, he goes for the exact same assortment of ciders and beers because they are his favorites.

Which individual is likely to be more motivated by the need to seek consistency?

Person A

Person B

Question 3:

Person A has been searching for a job for a long time. She is excited to learn that she has received an invitation to go out to dinner with a recruiter for an ideal job. Unfortunately, the dinner is the same night that a group of friend's planned to go out to dinner to celebrate a good friend's birthday.

She sends a text out to her friends to say she will have to skip the birthday dinner.

Person B has planned to meet a friend for dinner who is coming in from out of town. Unfortunately, the dinner coincides with an unexpected class meeting for a group project that Person B has already spent a lot of time on. He sends out a text to the project group to tell them he will not be able to attend the unexpected meeting because of his prior engagement.

Which individual is likely taking action to avoid negative feelings?

Person A

Person B

Question 4:

Person A is looking for a new car. She has talked with her friends and gotten their opinions on what they believe are the best cars out there. She has read *Consumer Reports* and online reviews. After comparing the alternatives, she chooses to purchase a car that is generally considered the best car on the market.

Person B is looking for a new car. He really only cares about price and the color of the car (it must be a particular shade of green). He searches for a car online and compares alternatives until he finds an option that fits his needs on color and price. The rest of the car's features don't really matter to him.

Which individual is likely to be more motivated by the goal to maximize?

Person A

Person B

Before beginning the choice task, please think about **how much you want to achieve each of the goals below right now**. Provide a goal activation level for each goal. That is, use the 0 to 10 scale provided where **0= Much less active than typical** and **10= Much more active than typical** to indicate your desire for each goal right now.

	0	1	2	3	4	5	6	7	8	9	10
<p>Prioritize Options- The desire to figure out my priorities and select options which most clearly match those priorities, even if this means giving up other attractive options.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>Seek Consistency- The desire to be consistent in choices across decisions.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>Avoid Negative Feelings- The desire to avoid thoughts, information, or situations that evoke negative feelings.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>Maximization- The desire to identify what is generally accepted to be the best option.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

On the pages that follow, you will make a choice between different cities to visit on a road trip. What you should do now is imagine that you are making a real travel decision.

Suppose that you and a friend are going on a three week road trip starting in Los Angeles. Please indicate how you would allocate your 21 days of travel across the cities below, based on your preferences. Note that to visit a city, you must allocate at least one day to that city.

San Francisco, CA : _____

San Diego, CA : _____
 Phoenix, AZ : _____
 Seattle, WA : _____
 Portland, OR : _____
 Denver, CO : _____
 Boulder, CO : _____
 Austin, TX : _____
 Las Vegas, NV : _____
 Dallas, TX : _____
 Total : _____

[Filler task]

No Contraction condition: You happen to be talking to your mom on the phone later that day. She would like to know where you want to travel on your road trip.

Contraction condition: You happen to be talking to your friend. You find out some bad news. Something has come up and now you can only travel for 7 days.

When you were talking to your mom about allocating your 21 days across the cities [When you found out your trip had been reduced to just 7 days], what did you want to accomplish with respect to each of the goals below? Think about how much you wanted to achieve each of the goals below. Provide a goal activation level for each goal. That is, use the 0 to 10 scale provided where 0= Much less active than typical and 10= Much more active than typical to indicate your desire for each goal right now.

[Goal Activation Log task]

Now allocate your **21 [7]** days of travel across the cities below, based on your preferences. Note that to visit a city, you must allocate at least one day to that city.

[Allocation task]

No Contraction condition: Your friend texts you: You need to finalize the trip itinerary.

Contraction condition: Your friend texts you: Good news! The obligation has been resolved. You can again travel for the full three weeks.

Indicate how you would allocate your 21 days of travel across the cities below, based on your preferences. Note that to visit a city, you must allocate at least one day to that city.

[Allocation task]

When you were allocating your final allocation of 21 days to cities, what did you want to accomplish with respect to each of the goals below? Think about how much you wanted

to achieve each of the goals below. Provide a goal activation level for each goal. That is, use the 0 to 10 scale provided where 0= Much less active than typical and 10= Much more active than typical to indicate your desire for each goal right now.

[Goal Activation Log task]

Of the cities considered, please indicate which you have traveled to previously. Select all cities that apply. If you have never traveled to any of the cities, please select none of the above.

- San Francisco, San Diego, Phoenix, Seattle, Portland, Denver, Boulder, Austin, Las Vegas, Dallas, None of the above

[Demographic Questions]

Study 6 - Evidence of Preference Refinement During the U.S. Government Shutdown

Phase 1

All of the questions below ask you to consider how the government shutdown may have affected your personal income/budget/perceptions of how much money you have to spend. The questions do not focus on how the government is spending money. Please keep this in mind as you proceed.

Are you being directly or indirectly affected by the current government shutdown financially? Examples might include working as an essential or non-essential employee for the government directly or having a business that depends on the government being open (e.g., restaurant near a government building). (Yes or No)

What types of items have you been cutting from your budget as a result of the shutdown (e.g., entertainment, food)? Put none if you have cut nothing.

Do you think that when the government re-opens, you will revert back to your old level of spending overall? (1=Definitely Not, Definitely Yes)

[Demographic Questions]

Phase 2

This is a follow-up to the survey you completed two weeks ago regarding the current government shutdown. We are interested in how the government shutdown is affecting your personal finances.

Are you or someone in your household financially affected by the current government shutdown? Examples include not receiving a paycheck from the government or losing business due to the shutdown. (Yes, No)

Thinking about your budget before the shutdown, how much money did you spend in the following categories in a month? For example, if you spent \$100 eating out at restaurants in a month then you would type 100 in the box.

Entertainment: _____
 Eating out: _____
 Alcohol, Cigarettes, etc.: _____
 Shopping for new clothing: _____
 Shopping: _____
 Vacation travel: _____
 Services (e.g., hair salon, nail salon, house cleaners): _____
 Medical (e.g., medicine): _____
 Memberships (e.g., gym, clubs): _____
 Charitable giving: _____
 Insurance (e.g., car, life): _____
 Child care: _____
 Food at grocery store: _____
 Utilities (e.g., putting the thermostat to a cooler temperature, cutting back on water use, not leaving lights turned on): _____
 Gas or transportation costs: _____
 Education expenses: _____
 Mortgage or rent: _____
 Total: _____

Thinking about your budget before the shutdown, what proportion of the original budgeted amount are you currently spending in the following categories? For example, if since the shutdown occurred you have completely cut eating out at restaurants, you would keep the slider bar at zero. You are spending zero percent of the original budget. As another example, if you have cut child care expenses and now are spending about 40% of what you used to spend, slide the bar over to 40. If you have made no change to the spending in a category since the shutdown, slide the bar over to 100.

[Same list of expenses]

Do you think that when the government re-opens, you will revert back to your old level of spending overall? (1= Definitely Not, 7= Definitely Yes)

Phase 3

This is a follow-up to the survey you completed last week regarding the government shutdown. We are interested in how the government shutdown affected your personal finances and your spending now.

Were you or someone in your household financially affected by the government shutdown? Examples include not receiving a paycheck from the government during the shutdown or losing business during the shutdown. (Yes, No)

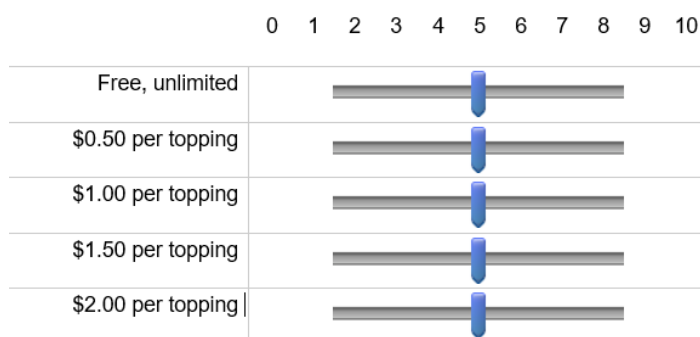
Now that the shutdown has ended, how much money will you budget to spend in the following categories in a month? For example, if you plan to spend \$100 eating out at restaurants in a month then you would type 100 in the box.

[Same list of expenses]

Do you think that you will revert back to your old level of spending (i.e., how you were spending your income prior to the government shutdown)? (1= Definitely Not, 7= Definitely Yes)

Common Filler Tasks (across all studies)

- To simulate the passage of time, we are asking you to provide some information about a completely different topic -- the number of toppings people add to their pizza when those toppings cost different amounts of money. Below please indicate how many toppings you would add to your pizza for each price scenario. Slide the bar over to indicate the number of toppings you would add to a single, large size cheese pizza.



- To simulate the passage of time, please unscramble the following sentences...
 - o did chocolate want really he dessert the
 - o deer tree nibbling the was on the
 - o to need structures repaired be historic the

Common Demographic Questions (across all studies)

- What is your gender? (male, female)
- Which is your age?
- What is your race? (White/Caucasian, African America, Hispanic, Asian, Native American, Pacific Islander, Other)
- Do you mainly speak English while at home? (yes, no)

Chapter 3

ESSAY 2: DISORDER AND DOWNSIZING

3.1 Introduction

Consumers often need to downsize. Aging baby boomers may be required to downsize their households (Williston Financial Group 2018), younger people may seek to simplify their lives as exemplified by the tiny house movement (Mullins 2010), and minimalism is increasingly popular as a design aesthetic (Harding 2018). Meanwhile, overconsumption has filled American homes to overflowing with an accumulation of goods, as witnessed by the \$38 billion revenue in self-storage (Harris 2019) and the 2021 projection of home organization products sales to \$11.8 billion (Freedonia Group 2017). This backdrop begs an interesting question: what is an effective approach to downsizing?

Research on this topic is surprisingly scant, a gap in the literature we begin to address by investigating how dis/order (messy vs. tidy items and spaces) and decision strategy (selection vs. rejection) affect downsizing. We find, across ten studies, that a) consumers retain fewer items when selecting from a disordered set (i.e., choosing what to keep from messy items), because b) disorder inhibits the comparisons that underlie the tendency to retain items, especially among maximizers. We also show that, in contrast to the effectiveness of selecting from disorder, consumers' lay beliefs favor rejection and order (i.e., choosing what to get rid of from tidy items). That is, downsizing may be undermined by consumers adopting a less effective approach. Together, this research has

implications for consumer downsizing, the burgeoning home organization and storage industries, as well as consumer welfare and sustainability.

This research sheds light on how consumers can more effectively downsize, with several contributions to the literature. First, we are the first (to our knowledge) to examine downsizing, an important but poorly understood marketplace phenomenon with consequences for consumers and society. Second, we identify an important downside to order. Specifically, order inhibits rather than facilitates downsizing, thereby adding to the emerging messy/tidy literature (Chae and Zhu 2014; Doucé et al. 2014; Vohs, Redden, and Rahinel 2013). Third, we extend the literature on selection and rejection as decision-making strategies by showing that the well-established difference in rejection versus selection (Levin et al. 2002; Park, Sung, and Macinnis 2000) in consideration set formation extends to downsizing and is moderated by dis/order. Fourth, we contribute to the literature on maximizing (Chowdhury, Ratneshwar, and Mohanty 2009; Huang and Zeelenberg 2012; Iyengar, Wells, and Schwartz 2006; Ma and Roese 2014; Schwartz et al. 2002) by showing how maximizing alters downsizing effectiveness by moderating the impact of dis/order. That is, in a downsizing context, maximizing tendencies are an advantage (disadvantage) when selecting from disorder (order). Finally, we shed light on how consumers' erroneous lay beliefs about downsizing may undermine their efforts to do so, with consequences not only for consumer and societal welfare, but also for marketers in relevant industries (such as home organization and storage).

3.2 Dis/Order

For the purposes of our research, dis/order refers to the extent to which items in a set are disorganized or organized. This distinction is frequently referred to colloquially as messy or tidy, and we use the terms interchangeably. What does the literature have to say about dis/order in general?

Broadly speaking, order has positive associations. At the individual level, tidiness is generally associated with morality (Douglas 1966; Liljenquist, Zhong, and Galinsky 2010; Mazar and Zhong 2010) and specifically associated with greater self-control (e.g., weight; Parker-Pope 2008). Messiness leads to less favorable evaluations in a workplace setting – for example, employees with a messy desk are evaluated as having lower intelligence (Elsbach and Pratt 2007). Similarly, in a retail setting, messiness also leads to less favorable evaluations of a retailer (Doucé et al. 2014). Whether such associations are veridical is unclear, but research does suggest that disorder can pose a threat to consumers' personal control and lead to self-regulatory failures (Chae and Zhu 2014). Indeed, Wilson and Kelling's (1982) broken windows theory also links disorder to problematic behaviors (Keizer, Lindenberg, and Steg 2008).

In contrast, some evidence points to positive aspects of disorder (Denegri-Knott and Parsons 2014). Anecdotally, Albert Einstein is famous for saying, "If a cluttered desk is a sign of a cluttered mind, of what, then, is an empty desk a sign?" Research provides some corroborating evidence: for example, disorder promotes creativity (Abrahamson and Freedman 2007; Vohs et al. 2013), as does organizing information without higher level categories (Kim and Zhong 2017). Furthermore, disordered environments may be better suited for cognitive processes requiring open thinking (McMains and Kastner

2011) and, relatedly, confirmatory information processing declines in disordered environments, leading to less biased judgments (Niedernhuber, Kastenmueller, and Fischer 2014). Interestingly, in a choice context when faced with large assortments, disorder reduces perceptions of variety and decreases the amount chosen (Kahn and Wansink 2004).

Given the largely positive associations of order, we suspect that consumer lay beliefs will favor order when it comes to downsizing. Indeed, popular advice frequently touts organizing or tidying as a first step in efforts to downsize (Trulia 2016). In contrast, however, the processing benefits of disorder – more open thinking, less confirmatory processing, and reduced perceptions of variety – could instead facilitate downsizing. Having said that, we suggest that the impact of dis/order on downsizing will also depend upon decision strategy.

3.3 Select Versus Reject Strategies

When making downsizing decisions, two fundamentally distinct strategies exist: selection (choosing what to keep) and rejection (identifying what to get rid of). The literature on selection/rejection, sometimes referred to as inclusion/exclusion, has typically found that selection is more effective at narrowing items for further consideration to create a choice set.

When selecting (or inclusion), accepting an alternative into the consideration set requires a good reason; in the absence of such justification, the default leaves the alternative outside the consideration set. Conversely, in rejection (or exclusion), all

options are defaulted into the consideration set and good reasons are needed to eliminate them. Because rejection is more final, the criteria for removing an item is set higher (Yaniv and Schul 1997), resulting in larger choice sets. Indeed, much research has shown that rejecting items leads to larger choice sets compared to selection (Levin et al. 2002; Park et al. 2000). For example, people choose more automobile options when rejecting from a full model than selecting from a base model (Park et al. 2000); likewise, people end up with more pizza toppings when rejecting toppings from a fully-loaded pizza than selecting toppings to add to a base pizza (Levin et al. 2002).





How does choice of strategy relate to the task of downsizing? We suspect that consumer lay beliefs will favor a rejection strategy when it comes to downsizing (whose purpose, after all, is to get rid of things). In contrast, however, the literature on decision-making (albeit not in a downsizing context) suggests that rejection will not be helpful because people find it more difficult to get rid of options from a set. Thus, based on the literature, a selection strategy should facilitate downsizing more so than rejection. We further theorize that the impact of selection/rejection will depend upon dis/order, as follows.

3.4 Dis/Order and Selection/Rejection

We hypothesize that the specific process by which downsizing decisions are made differs depending on whether items are dis/ordered. We capture our theorizing in figure 3.1 using the concrete example of downsizing clothing.

FIGURE 3.1

SELECTING/REJECTING FROM DIS/ORDER

<p>A: Selecting from Disorder</p>  <p><i>“Should I keep these jeans? Nah, they’re not so great.”</i></p> <p>When items are disordered, consumers will tend to evaluate each item (e.g., a pair of jeans) one at a time and, absent conflict providing justification for selection, fewer items will be retained.</p>	<p>B: Selecting from Order</p>  <p><i>“Which jeans should I keep? It’s hard to decide, I think I better keep both.”</i></p> <p>When items are ordered, consumers will compare items (e.g., several pairs of jeans) and, because comparing facilitates justification and tends to resolve conflict in favor of selection, more items will be retained.</p>
<p>C: Rejecting from Disorder</p>  <p><i>“Should I get rid of these jeans? Getting rid of things is so final. I think I better keep them.”</i></p>	<p>D: Rejecting from Order</p>  <p><i>“Which jeans should I get rid of? Getting rid of things is so final. I think I better keep both.”</i></p> <p>Dis/order has less effect under a rejection strategy: whether consumers evaluate separately or comparatively, consumers default to retaining items because rejection seems so final.</p>

To begin, we theorize that disorder makes processing more difficult; in particular, making comparisons among similar items is almost impossible when items are disordered. Order makes it easier for consumers to make comparisons among items due to their spatial organization by category (Abrahamson 2002; Simon 1962). When items are disordered, the decision maker will likely resort to *alternative-based processing* to decide what to downsize (Sanbonmatsu, Kardes, and Gibson 1991). Here, a decision maker evaluates each alternative holistically, combining values across attributes to make an overall assessment (Bettman and Kakkar 1977; Bettman, Luce, and Payne 1998; McGill and Anand 1989). When an environment is ordered, it will naturally lend itself to the across-attribute comparisons typical of *attribute-based processing*; options are evaluated by attribute, with the values on each attribute dimension compared across the alternatives (Payne, Bettman, and Johnson 1988). However, the latter involves inter-brand comparisons and trade-offs among attributes and leads to more decision conflicts and greater uncertainty (Dhar 1996). Attribute-based processing can shift decision makers into strategies to make the choice easier/ less final, such as compromise and choice deferral (Dhar and Simonson 2003; Simonson 1989). A disordered environment – because it leads to more alternative-based processing – eases the need to justify one’s choices (Jang and Yoon 2016).

How will this subsequently affect the decision maker’s capacity to downsize under a selection versus rejection strategy? Under a selection strategy, when items are ordered, attribute-based processing may lead to decision difficulty and conflict (Dhar 1996), and consumers are expected to resolve conflict by including items in the set (cf. Dhar and Simonson 2003; Simonson 1989). When items are disordered, alternative-based

processing reduces the decision conflict that arises from comparison (Jang and Yoon 2016) and that, in turn, provides less of an impetus for including items in the set. As a result, we predict that consumers will retain fewer items when selecting from disorder (vs. order). In contrast, rejecting is more final and the criteria for taking action is set higher (Yaniv and Schul 1997). Any differences arising from order (vs. disorder) tends to be resolved by simply not removing the item in the set. As a result, consumers retain more items when rejecting, regardless of dis/order.

Together, this theorizing leads to the following hypotheses:

H1: Consumers retain fewer items when downsizing from a disordered (vs. ordered) set, especially under a selection rather than rejection strategy.

H2: Disorder increases processing difficulty by inhibiting the comparisons (characteristic of attribute-based rather than alternative-based processing) that underlie the tendency to include items under selection (but not rejection).

If supported, H1 predicts a two-way interaction of dis/order and selection/rejection on downsizing effectiveness, and H2 proposes that the sorting difficulty associated with disorder inhibits comparison processes. As such, we predict that both sorting difficulty and style of processing as alternative-based versus attribute-based will serially mediate the effect of dis/order under selection. Our empirical work will investigate these hypotheses in a series of studies examining downsizing, while drawing a contrast to lay beliefs that are expected to favor rejection and order.

3.5 Maximizing

We theorize that consumers will retain fewer items when selecting from a disordered set (i.e., choosing what to keep from messy items) because disorder inhibits the comparisons that underlie the tendency to retain items under selection. But who will be most susceptible to the effects of dis/order?

We focus on the role of maximizing, defined as the goal of making the best choice (Schwartz et al. 2002). Research has distinguished maximizing from its counterpart, satisficing, in which people find options that meet their goals and preferences (Simon 1956) and that are ‘good enough’ and pass a threshold of acceptability (Schwartz et al. 2002). Not only does maximizing include finding the best, it also involves extensive search and comparisons across options and attributes; indeed, maximizers have a greater natural tendency to make comparisons, especially on vertical attributes that can be ranked (Cheek and Schwartz 2016) and also look at more options when making a decision (Chowdhury et al. 2009; Polman 2010; Schwartz et al. 2002). For example, maximizers applied for and attended more job interviews, as their need to make comparisons is higher compared to satisficers (Iyengar et al. 2006). Having said that, the consequences of maximizing appear somewhat mixed: while maximizers make better objective decisions (e.g., netting a higher mean salary following job interviews; Iyengar et al. 2006), maximizers may experience more regret and be less satisfied with their decisions (Chowdhury et al. 2009; Huang and Zeelenberg 2012; Iyengar et al. 2006; Ma and Roeser 2014; Schwartz et al. 2002).

Given our theorizing, we expect that the tendency to maximize will moderate the effect of dis/order on downsizing. Disorder (vs. order) inhibits comparison among

alternatives, and hence the impact of disorder should be magnified among maximizers, who have a greater natural tendency to make comparisons. In contrast, consumers low in maximizing do not tend to make such comparisons and hence, the impact of dis/order will matter less. Accordingly, we hypothesize:

H3: Consumers retain fewer items when selecting from disorder (vs. order), especially when maximizing tendencies are higher.

H3 predicts a two-way interaction of dis/order and maximizing on downsizing effectiveness and suggests that maximizers will be especially susceptible to the impact of disorder on downsizing. If supported, this prediction would also lend further support to H2 and the mediating role of comparison processes (via moderation of process; Spencer, Zanna, and Fong 2005).

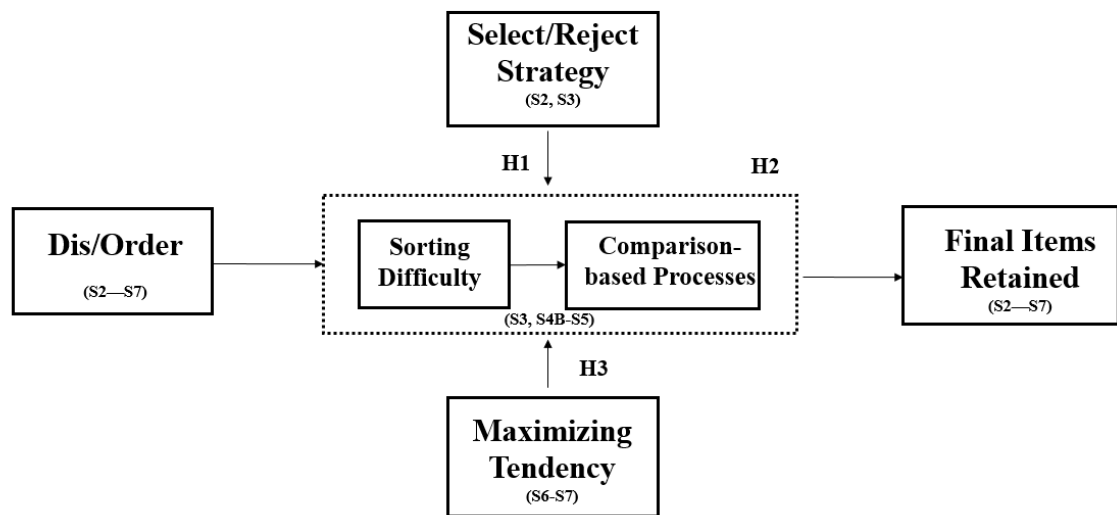
3.6 Empirical Overview

We test our theorizing in a series of ten studies (see figure 3.2 for an organizing framework). Study 1 addresses the question of lay beliefs and finds that consumers believe rejecting from order is the most effective way to downsize. Additionally, we survey experts in the field (i.e., professional organizers) who support rejecting from disorder as the best way to downsize. We reconcile these differences in the studies that follow and find that both of these beliefs are erroneous: studies 2 and 3 (and an Appendix A study) examine the impact of selection/rejection and dis/order on downsizing in multiple domains and find that selecting from disorder leads to retention of fewer items. That is, those who are attempting to downsize will be more successful when deciding

what to keep from a mess. Studies 4A and 4B replicate the impact of dis/order under selection with an eye to external validity: study 4A mimics the context of study 2 with a consequential dependent variable, and study 4B examines real-world evidence of downsizing in a moving context. Study 5 investigates the underlying psychological mechanism (i.e., that disorder inhibits the comparisons that underlie the tendency to retain items under selection). Finally, studies 6 and 7 provide further evidence for process while exploring the moderating role of maximizing tendency: study 6 demonstrates that dis/order differences are greater among maximizers, and study 7 replicates this interaction effect in a survey of individuals who have recently downsized.

FIGURE 3.2

ORGANIZING FRAMEWORK



3.7 Study 1A: Consumer Lay Beliefs

We conducted two studies to investigate consumer lay beliefs about downsizing and predict that consumers will believe that order (given its positive associations) and a rejection strategy (given its alignment with getting rid of things) will be most effective when downsizing. In study 1A, we asked consumers to rate selection versus rejection as a downsizing strategy, and separately, whether downsizing would be facilitated if the items were organized versus disorganized.

3.7.1 Method

Undergraduate students ($n = 172$; 49% female; median age = 18) participated in this study for extra credit in an introductory business class. Participants were asked to imagine they wanted to reduce the clothing in their closets and were shown either a picture of an organized or disorganized closet. They were asked what would be the best way to approach the task (1 = choose what to keep, 7 = choose what to get rid of). Participants were also asked whether the items in the closet should be tidy or messy (1 = tidy, 7 = messy) before beginning the downsizing task. Afterwards, participants provided demographic information. (See Appendix B for exact wording of stimuli.)

3.7.2 Results

Participants reported that they thought the best strategy for downsizing was to choose what to get rid of (i.e., reject; $M = 4.46$, $SD = 2.30$; $t(171) = 2.63$, $p = .009$).

Participants also thought the best strategy was starting with tidied items (i.e., order; $M = 2.48$, $SD = 1.69$; $t(171) = -11.75$, $p < .001$). For both t -tests, a directional, one-sided, t -test was conducted to examine whether the scale mean was greater or smaller than the mid-point of the scale (4). The tests revealed that consumers' lay beliefs about the best approach to downsizing support the seemingly sensible strategy to reject items from an ordered set.

3.8 Study 1B: Consumer Lay Beliefs

In study 1B, we asked consumers to rate the advice of experts advocating for each of the four combinations of select/ reject X order/ disorder.

3.8.1 Method

Amazon Mechanical Turk workers ($n = 207$; 35% female; median age = 34) participated in this study in exchange for a small payment. Participants imagined that they were moving to a much smaller home with a corresponding smaller closet, and they would need to downsize their clothing. They had visited a number of professional organizers' websites seeking advice. The advice described four strategies (reflecting

select/reject X dis/order): selecting from order, selecting from disorder, rejecting from order, and rejecting from disorder (see Appendix B for exact wording). The four strategies were presented in randomized order and participants rated each as follows: “how likely would you be to follow the advice of the expert” (1 = Not at all likely, 7 = Extremely likely) and “how effective do you believe this strategy would be for downsizing” (1 = Not at all effective, 7 = Extremely effective). Afterwards, participants provided demographic information.

3.8.2 Results

Because the ratings were highly correlated by strategy (all r 's > .76), we averaged the two responses to create a single measure of expected efficacy. A repeated measures analysis revealed significant differences among the downsizing strategies (Wilks' $\Lambda = .62$, $F(3, 204) = 41.17$, $p < .001$, partial $\eta^2 = .38$). Rejecting-from-order was rated highest ($M = 5.39$, $SD = 1.24$), followed by selecting-from-order ($M = 5.02$, $SD = 1.38$), rejecting-from-disorder ($M = 4.26$, $SD = 1.71$), and finally selecting-from-disorder ($M = 4.05$, $SD = 1.78$). All strategies differed from each other (all $ps < .03$). That is, consumers expected that the most efficacious way to downsize was rejecting-from-order and least efficacious was selecting-from-disorder.

3.9 Study 1C: Expert Advice

In study 1C, we asked professional organizers the approach they advise their clients to use when downsizing and to react to strategy X dis/order scenarios that paralleled the advice scenarios in study 1B.

3.9.1 Method

Professional organizers affiliated with the National Association of Productivity and Organizing Professionals (NAPO) (n = 306; 99% female; median age = 55) participated in this study in exchange for the chance to win one of three Amazon gift cards. Participants were asked to rate four strategy X dis/order scenarios that approximated those used in study 1B. Wording was modified slightly to reflect the requirements of NAPO and accommodate terminology used (and not used) in the professional organizing industry (see Appendix B for exact wording), though the spirit of the scenarios from study 1B remained intact. The four strategies were presented in random order. Participants rated each scenario as follows: “how effective do you believe this strategy would be for downsizing” (1 = Not at all effective, 6 = Extremely effective) and “how likely would you be to give this advice to a client” (1 = Not at all likely, 6 = Extremely likely). Afterwards, participants provided demographic information.

3.9.2 Results

Because the ratings were highly correlated by strategy (all r 's > .93), we averaged the two responses to create a single measure of expected efficacy as in study 1B. A

repeated measures analysis revealed significant differences among the downsizing strategies (Wilks' $\Lambda = .93$, $F(3, 303) = 7.37$, $p < .001$, partial $\eta^2 = .07$). Rejecting-from-disorder was rated highest on expected efficacy ($M = 3.63$, $SD = 1.54$), followed by selecting-from-disorder ($M = 3.29$, $SD = 1.47$), rejecting-from-order ($M = 3.14$, $SD = 1.44$), and finally selecting-from-order ($M = 3.10$, $SD = 1.47$). Rejecting-from-disorder differed from all other strategies (all $ps < .001$). All other strategies did not differ from each other (all $ps > .11$). Experts believed that the most efficacious way to downsize of the four strategies was rejecting-from-disorder.² Though we expected professionals and lay people to differ on which strategy they believed would be most effective for downsizing, neither group believed that selecting from disorder would be the most successful.

3.9.3 Discussion

Consumers' lay beliefs about the most effective approach to downsizing support the seemingly sensible strategy to reject items from an ordered set. The strategy judged least effective was to select from disordered items. Experts, on the other hand, supported rejecting items from a disordered set. Both experts and novices beliefs are in sharp contrast to our prediction for actual downsizing effectiveness in H1, which subsequent studies will investigate.

² One potential account for the difference in lay/expert beliefs (i.e., endorsing rejection from order-disorder) is that professional organizers typically deal with clientele with disordered (rather than ordered) belongings.

3.10 Study 2: Selection/Rejection From Dis/Order

Study 2 investigates how dis/order and selection/rejection together affect downsizing (i.e., testing H1). We predict that consumers will retain fewer items when downsizing from a disordered (vs. ordered) set, especially under a selection rather than rejection strategy.

3.10.1 Method

Undergraduates at a large university (n = 171; 52% female; median age = 19) participated in a 2 (dis/order) x 2 (select/reject) design for extra credit in an introductory business course. Students imagined they were studying abroad, moving to a much smaller apartment with a similarly reduced closet, and told they could only bring half of their clothes with them. To manipulate dis/order, participants saw a picture of clothing, either disordered (messy piles) or ordered (organized by category in tidy piles). Fifty items from assorted clothing categories were listed (e.g., jeans/pants, shirts/blouses, sweaters, sweatshirts, long sleeve shirts, t-shirts, shoes, jackets, athletic wear). The items were either in a randomized order (i.e., disordered) or organized by clothing category (i.e., ordered). To manipulate select/reject strategy, participants used a drag and drop menu to select the clothing items they wanted to take on the trip or reject the clothing items they

did not want. Participants were required to select/reject between 20 and 30 items (i.e., an explicit range). We subsequently calculated the number of items retained. Afterwards, participants responded to a manipulation check that asked them to rate “To what extent were you thinking about the items you wanted to keep versus the items you wanted to get rid of?” (1 = Definitely the items I wanted to keep, 7 = Definitely the items I wanted to get rid of), as well as background information (e.g., demographics). See Appendix B for the full stimuli.

3.10.2 Results

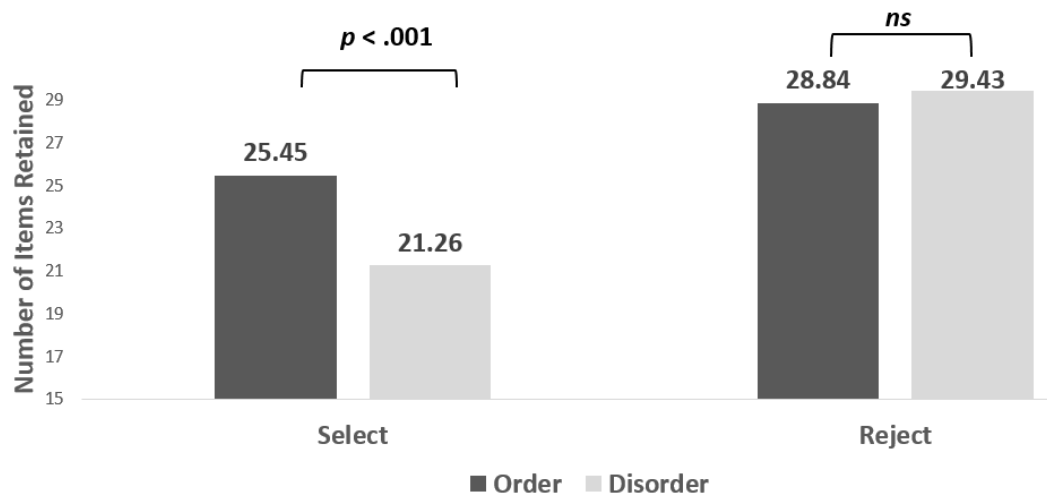
Participants in the rejection condition used more of a rejection strategy ($M = 3.56$, $SD = 1.86$) compared to those in the selection condition ($M = 2.19$, $SD = 1.47$) ($F(1, 167) = 28.49$, $p < .001$, partial $\eta^2 = .15$), indicating a successful manipulation. All other effects were NS ($ps > .43$).

An ANOVA of the final number of items retained revealed main effects of dis/order ($F(1, 167) = 20.81$, $p < .001$, partial $\eta^2 = .99$) and selection/rejection ($F(1, 167) = 213.54$, $p < .001$, partial $\eta^2 = .56$), qualified by their interaction ($F(1, 167) = 36.57$, $p < .001$, partial $\eta^2 = .18$) (see figure 3.3). When rejecting, the final number of items did not differ as a function of dis/order ($M_{order} = 28.84$ vs. $M_{disorder} = 29.43$) ($F(1, 167) = 1.11$, $p = .29$, partial $\eta^2 = .007$). However, when selecting, participants retained fewer items when disordered versus ordered ($M_{order} = 25.45$ vs. $M_{disorder} = 21.26$) ($F(1, 167) = 55.96$, $p < .001$, partial $\eta^2 = .25$). Hence, disorder facilitates downsizing under a selection strategy –

consistent with H1 and in contrast to both consumers' lay beliefs and experts' beliefs (in study 1).

Figure 3.3

Downsizing as a Function of Dis/Order and Selection/Rejection



3.11 Study 3: Selection/Rejection From Dis/Order By Category

Study 3 seeks to test the robustness of H1 in a new context (candy) and explores how downsizing is occurring. As in study 2, we predict that consumers will retain fewer items when downsizing from a disordered (vs. ordered) set, especially under a selection rather than rejection strategy. We also examine how downsizing is accomplished: Are consumers eliminating entire categories as they might during a budget contraction

(Carlson et al. 2015)? Are they only reducing the number of items within a few categories? Or are they both eliminating categories as well as items within categories? Given our theorizing (that disorder inhibits the comparisons within category that tend to drive retention of items under selection) we expect to see differences in the number of items within category (although elimination of categories may also occur).

3.11.1 Method

Undergraduate students participated in this study ($n = 222$; 46% female; median age = 19) for extra credit in an introductory business course. The design was a 2 (dis/order) \times 2 (select/reject) between-subjects design. Participants imagined they had taken a trip to the beach over the summer and purchased a large amount of saltwater taffy. They were tired of the candy and sought to reduce the number of pieces to fit into a snack bag. Dis/order was manipulated as in study 2 (picture and list). Selection/rejection was also manipulated as in study 2.

There were a total of 50 candies in nine flavors (vanilla, licorice, chocolate, orange, lemon, watermelon, lime, strawberry, peppermint) and participants were told they could keep 25 or fewer candies. We calculated the final number of items retained, as well as the number of flavor categories retained (out of 9), and the average proportion within retained categories. (For example, if participants selected 2 out of 6 peppermint candies, the proportion was calculated as 0.33, and we then averaged across retained flavor categories.) After downsizing, participants responded to manipulation checks for selection/rejection (same as in study 2) and disorder (“how organized did the candies

feel?" 1 = completely disorganized, 7 = completely organized), as well as background information (e.g., demographics). See Appendix B for full stimuli.

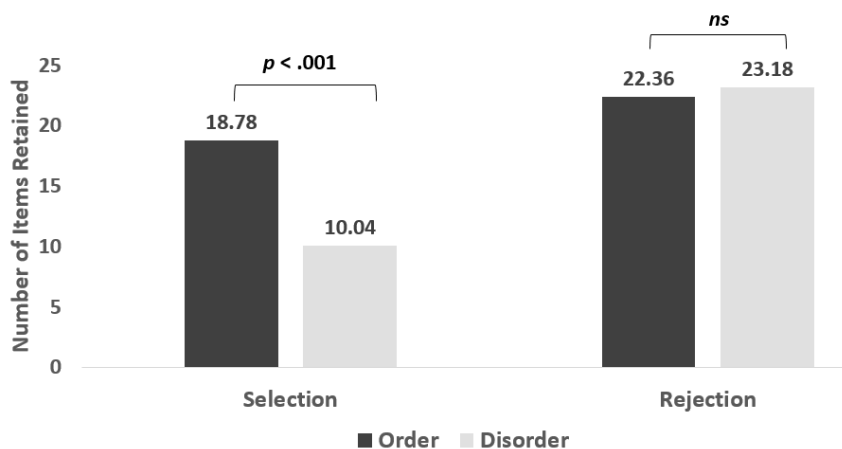
3.11.2 Results

Participants used more of a rejection strategy in the rejection versus selection conditions ($M_{rejection} = 4.25$ vs. $M_{selection} = 2.37$; $F(1, 217) = 46.86$, $p < .001$, partial $\eta^2 = .18$). Participants also rated the items as more organized in the order versus disorder conditions ($M_{order} = 5.70$ vs. $M_{disorder} = 2.19$; $F(1, 182) = 266.58$, $p < .001$, partial $\eta^2 = .59$). Other effects were NS ($ps > .32$). Hence, the manipulations succeeded as intended.

An ANOVA of the number of items retained revealed main effects of dis/order ($F(1, 218) = 23.74$, $p < .001$, partial $\eta^2 = .10$) and strategy ($F(1, 218) = 105.92$, $p < .001$, partial $\eta^2 = .33$), qualified by their two-way interaction ($F(1, 218) = 34.65$, $p < .001$, partial $\eta^2 = .14$) (see figure 3.4). When rejecting, dis/order had no effect on number of items retained ($M_{disorder} = 23.18$ vs. $M_{order} = 22.36$) ($F(1, 218) = .52$, $p = .47$, partial $\eta^2 = .002$). When selecting, however, participants retained fewer items in the disordered versus ordered condition ($M_{order} = 18.78$ vs. $M_{disorder} = 10.04$) ($F(1, 218) = 57.86$, $p < .001$, partial $\eta^2 = .21$). This result supports H1 and replicates the findings of study 2.

Figure 3.4

Downsizing as a Function of Dis/Order and Selection/Rejection



To assess how downsizing occurred, we examined whether participants eliminated entire categories of consumption and/or reduced items within categories. First, we examined the number of unique flavor categories retained (out of 9): ANOVA revealed main effects of disorder ($M_{disorder} = 5.56$ vs. $M_{order} = 5.99$; $F(1, 218) = 2.78$, $p = .10$, partial $\eta^2 = .01$) and decision strategy ($M_{rejection} = 6.11$ vs. $M_{selection} = 5.44$; $F(1, 218) = 6.90$, $p = .009$, partial $\eta^2 = .03$); the interaction was NS ($F(1, 218) = 1.54$, $p = .22$, partial $\eta^2 = .007$). That is, consumers retained more categories when items were ordered. They also retained more categories under a rejection strategy. Second, we examined the average proportion of items within each category retained, which revealed main effects of

dis/order ($F(1, 218) = 15.35, p < .001, \text{partial } \eta^2 = .07$) and selection/rejection ($F(1, 218) = 52.76, p < .001, \text{partial } \eta^2 = .20$), qualified by their interaction ($F(1, 218) = 26.68, p < .001, \text{partial } \eta^2 = .11$). Under rejection, dis/order had no effect ($M_{\text{disorder}} = .71$ vs. $M_{\text{order}} = .68; F(1, 218) = .78, p = .38, \text{partial } \eta^2 = .004$); under selection, a lower proportion of items were retained in the disordered versus ordered condition ($M_{\text{disorder}} = .36$ vs. $M_{\text{order}} = .62; F(1, 218) = 41.23, p < .001, \text{partial } \eta^2 = .16$).

We assessed moderated mediation using a bootstrapping analysis: dis/order (coded as 1 = disorder, 0 = order) was the independent variable, strategy (coded as 1 = select, 0 = reject) was the moderator, number of final items retained was the dependent variable, and number of categories and proportion of items per category were parallel mediators. For proportion of items within category, the indirect effect was supported under selection (PROCESS model 8, $b = -6.29, SE = 1.01, BC\ 95\% CI = [-8.23, -4.27]$) but not rejection ($b = .86, SE = 0.90, BC\ 95\% CI = [-.88, 2.63]$) and, moreover, the index of moderated mediation was significant (Index = $-7.16, SE = 1.38, BC\ 95\% CI = [-9.87, -4.42]$). For total number of categories, the indirect effect was supported under selection (PROCESS model 8, $b = -2.01, SE = 1.00, BC\ 95\% CI = [-3.92, -.05]$) but not rejection ($b = -.29, SE = 0.95, BC\ 95\% CI = [-2.23, 1.53]$); however, the index of moderated mediation was not significant (Index = $-1.72, SE = 1.36, BC\ 95\% CI = [-4.36, 1.00]$). These results support moderated mediation: the interaction of dis/order and selection/rejection on final number of items retained arises due to differences in the retention of items within category.

3.11.3 Discussion

Study 3 demonstrates that disorder facilitates downsizing under a selection strategy, supporting H1 and replicating the findings of study 2 in a new domain. (See also Appendix A for a replication study in the domain of household items.) In addition, we show that downsizing occurs both within and across categories (and does not arise merely due to elimination of categories) and, moreover, that the overall interaction is driven primarily by differences in the retention of items within category. (See also Appendix B for additional corroborating evidence for this pattern in study 2.) This finding is consistent with H2 and our theorizing that disorder facilitates downsizing by inhibiting comparisons of items. Given this robust evidence for dis/order differences under a selection strategy, subsequent studies will focus on the impact of dis/order under selection only as this strategy facilitates downsizing.

3.12 Study 4A: Manipulated Dis/Order

Study 4A examines real rather than hypothetical downsizing situations. Study 4A replicates study 3 with consequential downsizing of candy.

3.12.1 Method

Undergraduate students ($n = 101$; 58% female; median age = 19) participated in this study in exchange for extra credit in an introductory business class. As in study 3, participants imagined they had taken a trip to the beach over the summer and purchased a

large amount of saltwater taffy but were now tired of the candy and wanted to reduce the number of pieces to fit into a snack bag. (The study was conducted at the end of summer, lending it realism.) The candy was in a box and placed at each student's workstation and appeared exactly as shown in study 3, either ordered or disordered (i.e., organized by flavor or not). To prevent participants from inadvertently seeing other participants' manipulations (despite privacy dividers), dis/order was randomly assigned to session (averaging 7 participants per session).

Participants selected candies from the box they wanted to keep and put them inside a snack bag to take with them at the end of the lab session. (A research assistant determined the number of candies in the snack bag when removing the remaining candy from the workstation.) Participants then responded to a manipulation check question for disorder (same as in study 3). Participants also indicated the degree to which they had been selecting versus rejecting (same as study 3) and provided background information (e.g., demographics). See Appendix B for full stimuli.

3.12.2 Results

Participants used more of a selection strategy, as intended ($M = 2.15$, $SD = 1.45$; $t(100) = -12.88$, $p < .001$ in non-neutral t -test). Participants also rated the items as more organized in the order versus disorder condition ($M_{order} = 5.63$ vs. $M_{disorder} = 2.22$; $F(1, 99) = 180.86$, $p < .001$, partial $\eta^2 = .65$), supporting the manipulation.

An ANOVA on items retained revealed a main effect of dis/order: participants retained fewer items when selecting from a disordered versus ordered set ($M_{order} = 10.75$

vs. $M_{disorder} = 8.94$; $F(1, 99) = 3.99$, $p = .05$, partial $\eta^2 = .04$). These results support H1 and replicate the findings of study 3 with a consequential dependent variable: disorder facilitates downsizing under a selection strategy.

3.13 Study 4B: Measured Dis/Order

Study 4B examines actual downsizing as the result of a residential move. Consistent with H1 and studies 2 and 3, we expect that disorder will facilitate downsizing under a selection strategy.

3.13.1 Method

Undergraduate students ($n = 214$; 53% female; median age = 19) were approached and asked to complete a survey while turning in their dorm room keys at the end of the academic year.³ The focal dependent variable was items retained: participants were asked to indicate what proportion of their total belongings they had kept from their room when packing up (0-100%). (We assume the default strategy is selection because students select items to take with them; the items left behind are sold by the university to benefit a local charity.) As a measure of dis/order, participants indicated how messy or tidy their room was before packing (1 = messy, 7 = tidy). To further ensure selection was the strategy students were using when moving out, we asked what they focused on while going through their belongings (1 = items you wanted to get rid of, 7 = items you wanted

³ Three participants were eliminated for not properly following instructions.

to keep). We also asked how difficult the process was (1 = not at all difficult, 7 = very difficult). To rule out an alternative explanation when disorder is measured (i.e., that disordered environments contain more actual trash), participants also indicated the percentage of items they left behind that were trash (see Appendix B for full stimuli). Finally, participants provided background information (e.g., demographics).

3.13.2 Results

As expected in this context, participants were more focused on what they wanted to keep (i.e., a selection strategy) ($M = 4.51$, $SD = 1.62$; $t(212) = 4.56$, $p < .001$ in non-neutral t -test). A regression analysis indicated a positive association between order and the proportion of items retained ($b = .14$, $t(211) = 2.05$, $p = .04$); that is, disorder is associated with downsizing effectiveness. Next, a regression analysis indicated a negative association of order and difficulty ($b = -.14$, $t(211) = -2.08$, $p = .04$); that is, disorder increases the difficulty of the downsizing process. Furthermore, mediation analysis (with dis/order as the independent variable and proportion of items retained as the dependent variable) supported difficulty as a mediator (PROCESS model 4, $b = .16$, $SE = .11$, BC 90% CI = [.01, .37]). This mediation indicates that disorder—by making the downsizing process more difficult (e.g., by inhibiting comparison processes)—facilitates downsizing. Note that disorder did not covary with the amount of trash ($b = -.06$, $t(193) = -.78$, $p = .44$), ruling out trash as an alternative explanation when disorder is measured. These results support our theorizing in H1-H2 and replicate the findings of study 4A with real

behavior: disorder is associated with processing difficulty and, in turn, downsizing effectiveness.

3.13.3 Discussion

Studies 4A and 4B support H1 and replicate the findings of studies 2—3 with consequential and real behavior: as theorized, consumers retain fewer items when selecting from a disordered set of items. Moreover, the evidence suggests that processing difficulty underlies the impact of disorder on items retained, consistent with our theorizing in H2.

3.14 Study 5: Psychological Process

The objective of study 5 is to investigate the underlying psychological process (i.e., testing H2) associated with downsizing. We expect that disorder increases processing difficulty by inhibiting the comparisons that underlie the tendency to retain items under selection.

3.14.1 Method

Undergraduate students ($n = 123$; 43% female; median age = 19) participated in the study for extra credit in an introductory business class. The design was a two-group (dis/order) between-subjects design.

Participants imagined they were studying abroad and could only keep about half of their current clothing. Dis/order was manipulated as in study 2 (picture and list). Participants indicated what they wanted to keep (i.e., they were all in selection mode). After the downsizing task, participants responded to a measure capturing the extent to which they were comparing options as they were making their choices. Specifically, participants read definitions of alternative- and attribute-based processing. (“When individuals make decisions, sometimes they look at a single item and decide whether they want to keep or get rid of that item in isolation, without considering other items that might be similar. This is called alternative-based processing. Other times, individuals are looking at items within the same category and comparing items side by side. This is called attribute-based processing.”) Participants then indicated their processing (1 = definitely alternative-based, 7 = definitely attribute-based). Participants were also asked to indicate how difficult they found the downsizing task (1= easy to do, 7= difficult to do; 1 = simple, 7 = challenging; 1 = smooth, 7 = bumpy; 1 = easy to concentrate, 7 = difficult to concentrate). We also assessed various alternative explanations; see Appendix A for details. Finally, participants completed a manipulation check for disorder (“how messy or tidy did the clothes appear to you”: 1 = Extremely messy, 7 = Extremely tidy; 1 = Disorganized, 7 = Organized; $r = .94$), and provided background information (e.g., demographics).

3.14.2 Results

Participants rated the items as more ordered in the order versus disorder condition ($M_{order} = 5.39$ vs. $M_{disorder} = 2.40$; $F(1, 121) = 144.73$, $p < .001$, partial $\eta^2 = .55$). Hence, the manipulation succeeded as intended.

An ANOVA of the number of items retained revealed a main effect of dis/order ($F(1, 121) = 21.38$, $p < .001$, partial $\eta^2 = .15$). Participants retained fewer items when items were disordered versus ordered ($M_{order} = 24.08$ vs. $M_{disorder} = 18.54$). This result supports H1 and replicates the findings of studies 2 - 4.

We examine whether task difficulty and the extent to which they were engaged in comparisons (i.e., attribute-based vs. alternative-based processing) served as serial mediators of the downsizing difference. ANOVA of processing yielded a main effect of dis/order ($F(1, 121) = 4.59$, $p = .03$, partial $\eta^2 = .04$) such that attribute-based (comparison) processes were more prominent in the ordered versus disordered condition ($M_{order} = 4.37$ vs. $M_{disorder} = 3.69$). That is, disorder inhibits comparison-based processes. Likewise, ANOVA yielded a main effect of dis/order on difficulty ($M_{order} = 2.98$ vs. $M_{disorder} = 3.74$; $F(1, 120)^4 = 6.49$, $p = .01$, partial $\eta^2 = .05$), with greater difficulty when items were disordered versus ordered. That is, disorder makes processing more difficult and inhibits the comparisons characteristic of attribute-based processing.

To test H2, we assessed serial mediation by difficulty and comparison-based processing (M1 = Difficulty, M2 = Processing) with dis/order (1 = disorder, 0 = order) as

⁴ One participant did not complete the difficulty questions.

the independent variable and final items retained as the dependent variable. The analysis supports serial mediation (PROCESS model 6, $b = -0.13$, $SE = 0.11$, BC 90% CI = [-.34, -.003]). That is, selecting from disorder increased processing difficulty, which in turn inhibited the comparison-based processes that drive retention of items under selection. (For additional evidence ruling out alternative potential mediators, please see Appendix A.)

3.14.3 Discussion

Study 5 finds that selecting from disorder facilitates downsizing (supporting H1) and, moreover, sheds light on the underlying psychological mechanism (supporting H2). Specifically, disorder increases processing difficulty and reduces the extent to which individuals were making comparisons (characteristic of attribute-based vs. alternative-based processing) and that drives the retention of items under selection. We build on this evidence and examine the role of making comparisons in our final pair of studies by examining a maximizing tendency as a moderator.

3.15 Study 6: Maximization As A Moderator

Study 6 investigates a maximizing tendency as a theoretically and pragmatically relevant moderator (i.e., testing H3). Recall that maximizers make many comparisons and should be heavier users of attribute-based processing. We theorize that disorder inhibits comparisons among alternatives and this facilitates downsizing (retention of fewer items)

under a selection strategy. We therefore predict that fewer items will be retained when selecting from disorder (vs. order), especially among consumers who are maximizers (with a greater natural tendency to make comparisons, which disorder inhibits).

3.15.1 Method

Amazon Mechanical Turk workers ($n = 202$; 46% female; median age = 34) participated in exchange for a small payment. The study was a two-group (dis/order) between-subjects design, with maximizing as a measured covariate. All participants were told to focus on items to keep (i.e., selection).

In the first part of the study, participants completed the 13-item Maximization Scale on seven-point scales (1 = Completely disagree, 7 = Completely agree; Schwartz et al. 2002). After filler questions in an ostensibly unrelated task, participants were then asked to imagine they were moving to a new home next month with a smaller closet and needed to downsize their clothing. Dis/order was manipulated as in study 2 (picture and list). Participants used the selection strategy from study 2. After making their selections of what to keep, participants responded to a manipulation check for dis/order (1 = completely disorganized, 7 = completely organized; 1 = disordered, 7 = ordered; $r = .96$) and for selection (1 = Items I wanted to get rid of, 7 = Items I wanted to keep; 1 = Choosing what I did not want, 7 = Choosing what I did want; $r = .62$). Participants also

provided background information (e.g., demographics). (See Appendix B for full stimuli.)

3.15.2 Results

Participants used more of a selection strategy, as intended ($M = 5.96$, $SD = 1.16$; $t(200) = 24.06$, $p < .001$ in non-neutral t -test). Participants also rated the items as more ordered in the order versus disorder condition ($M_{order} = 6.25$ vs. $M_{disorder} = 2.99$; $F(1, 199) = 192.73$, $p < .001$, partial $\eta^2 = .49$), supporting the manipulation.

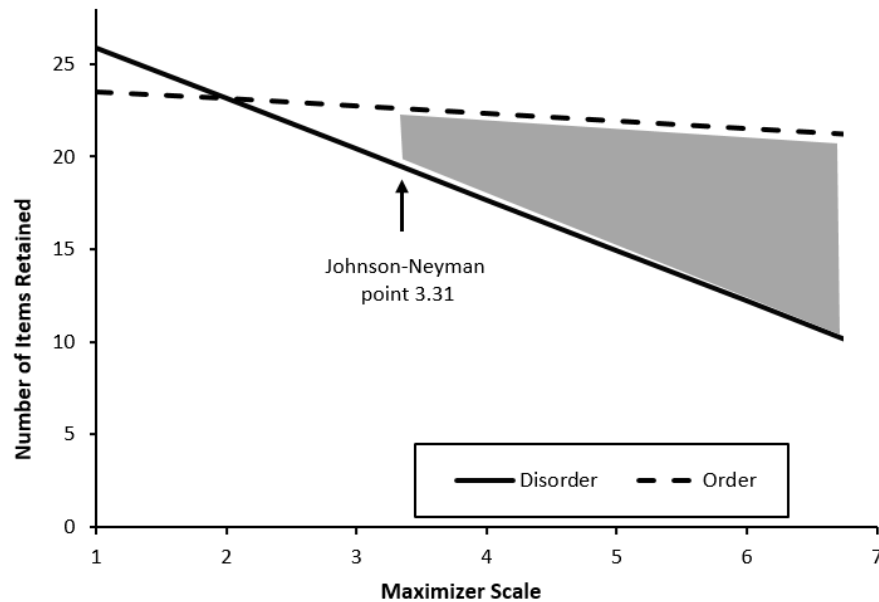
An ANOVA of the final number of clothing items retained revealed a main effect of dis/order ($M_{order} = 22.25$ vs. $M_{disorder} = 16.85$; $F(1, 200) = 22.05$, $p < .001$, partial $\eta^2 = .10$). Replicating studies 2 - 4 and supporting H1, participants retained fewer items when selecting from a disordered versus ordered set of items.

An ANCOVA incorporating the maximizing scale ($\alpha = .840$) revealed the expected two-way interaction of dis/order and maximizing ($b = -2.35$, $t(198) = -2.15$, $p = .03$); main effects for dis/order and maximization were NS ($b = 4.73$, $t(198) = .98$, $p = .33$ and $b = -.40$, $t(198) = -.56$, $p = .58$, respectively). As illustrated in figure 3.5, a floodlight analysis revealed an effect of dis/order that emerged above 3.31 on the maximizing scale ($b = -3.04$, $t(198) = -1.97$, $p = .05$). These results support H3: fewer items are retained when selecting from a disordered (vs. ordered) set, and this is accentuated among consumers higher in maximizing tendency who are thwarted from making comparisons under disorder.

In a post-hoc exploratory analysis, we also examined the dimensions of the maximizing scale that drive downsizing. A factor analysis supports the expected three-factor structure for this scale, with items reflecting *high standards* (e.g., “I never settle for second best”; $\alpha = .77$), *alternative search* (e.g., “No matter how satisfied I am with my job, it’s only right for me to be on the lookout for better opportunities”; $\alpha = .79$), and *decision difficulty* (e.g., “I often find it difficult to shop for a gift for a friend”; $\alpha = .81$). Our theorizing suggests that the tendency to make comparisons, which is reflected in the factors *alternative search* and *decision difficulty* should drive the previously observed interaction. We conducted separate ANCOVAs using each dimension of the subscale and observed the predicted two-way interaction of dis/order with *alternative search* ($b = -1.47$, $t(198) = -1.68$, $p = .09$) and with *decision difficulty* ($b = -1.44$, $t(198) = -1.90$, $p = .06$) but not with the factor *high standards* ($b = -.58$, $t(198) = -.60$, $p = .55$).

Figure 3.5

Downsizing as a Function of Dis/Order and Maximizing Tendency



3.15.3 Discussion

Study 6 supports H3: fewer items were retained when selecting from a disordered (vs. ordered) set, especially among consumers higher in maximizing tendency. We have theorized that disorder inhibits making comparisons among alternatives and this drives retention of items lower under a selection strategy. In other words, downsizing is facilitated when selecting among disordered items and this is accentuated for maximizers. Consistent with this theorizing, an exploratory analysis finds that the pattern of results is driven by the maximizing subscales that reflect the tendency to make comparisons.

3.16 Study 7: Maximizing and Dis/Order

Study 7 tests the interaction of dis/order and maximizing tendency on downsizing (i.e., testing H3) in a new context, specifically among individuals recalling a recent downsizing experience. We predict that individuals, especially those who are maximizers, will report retaining fewer items when selecting from disorder (vs. order).

3.16.1 Method

Amazon Mechanical Turk workers who had downsized in the last 3 months ($n = 133$; 41% female; median age = 30) were recruited to participate in the study in exchange for a small payment.

Participants were instructed to think back to their recent downsizing experience and describe it in an open-ended format. Participants were asked to describe the reason for downsizing and the areas downsized (as part of the cover story and to facilitate recall) and to briefly describe the state of the space they were downsizing before they started to downsize (subsequently coded for dis/order as described below). As the focal dependent variable, participants were also asked to indicate the percentage of items they retained using a slider scale (0-100%). Participants rated two items from the maximization scale used in study 6 (*alternative search*: “When I am in the car listening to the radio, I often check other stations to see if something better is playing, even if I’m relatively satisfied with what I’m listening to”; *decision difficulty*: “When shopping, I have a hard time finding clothing that I really love”; Schwartz et al. 2002) and provided background information (e.g., demographics). (See Appendix B for full stimuli.)

3.16.2 Results and Discussion

Two independent coders read the open-ended responses and coded each description as either disordered (“messy”), ordered (“tidy”), or none (unclear or no response). Intercoder agreement was 94% and disagreements were resolved via discussion. (Eight participants were eliminated because their responses could not be coded as either disordered or ordered, leaving 125 participants in subsequent analyses.) We note that dis/order was not correlated with maximizing ($b = -.09$, $t(123) = -.97$, $p = .33$).

A regression analysis revealed that participants retained a lower percentage of their items when downsizing from a disordered versus ordered set of items ($M_{order} = 56.10$ vs. $M_{disorder} = 44.29$; $F(1, 123) = 9.78$, $p = .002$, partial $\eta^2 = .07$). This result supports H1: disorder facilitates downsizing.

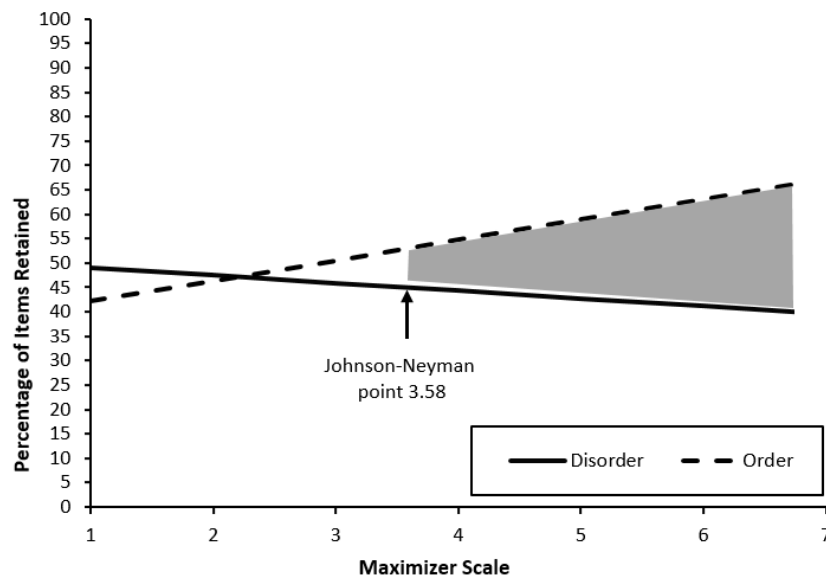
An ANCOVA incorporating the maximizing scale revealed a main effect of maximization ($b = 4.17$, $t(121) = 2.43$, $p = .02$)⁵, qualified by its interaction with dis/order ($b = -5.74$, $t(121) = -2.47$, $p = .02$); the main effect of dis/order was NS ($b = 12.64$, $t(121) = 1.21$, $p = .23$). As illustrated in figure 3.6, a floodlight analysis revealed an effect of dis/order that emerged above 3.58 on the maximizing scale ($b = -7.91$, $t(121) = -1.98$, $p = .05$). These results support H3 and replicate study 6: fewer items are retained when selecting from disorder (vs. order), especially among consumers higher in maximizing

⁵ We attribute the main effect of maximizing in study 7 (but not study 6) to the fact that maximizers are likely to have stronger attachment to their own belongings, making them more likely to retain items *ceteris paribus*.

tendency. That is, maximizing tendencies magnify the impact of dis/order on downsizing effectiveness.

Figure 3.6

Downsizing and Maximizing Tendency



3.17 General Discussion

What is an effective approach to downsizing? We investigate how dis/order (messy vs. tidy items) and decision strategy (selection vs. rejection) impact downsizing decisions in a series of ten studies across various contexts (clothing, food, household items). We find consumers retain fewer items when selecting, but not rejecting, from a disordered set (i.e., choosing what to keep from messy items) (studies 2 - 4). This downsizing effect emerges because disorder inhibits the comparisons that underlie the

tendency to retain items (study 5); as a result, the downsizing effect is especially likely to emerge among maximizers (studies 6 - 7). We also show that, in contrast to the effectiveness of selecting from disorder, consumers' lay beliefs favor rejection and order (i.e., choosing what to get rid of from tidy items) and experts in the field of downsizing suggest rejecting from disorder (studies 1A - 1C).

Together, this research makes several contributions to the literature. First, we are the first (to our knowledge) to systematically investigate downsizing, an important but poorly understood marketplace phenomenon with consequences for consumers and society. A variety of trends – aging baby boomers downsizing their households (Williston Financial Group 2018), younger people wanting to simplify (e.g., tiny house movement; Mullins 2010), and minimalism as a popular design aesthetic (Harding 2018) – point to increasing consumer interest in downsizing. Likewise, overconsumption and the sizeable markets for self-storage (Harris 2019) and home organization products and services (Freedonia Group 2017) suggest the need for more effective downsizing. Indeed, downsizing has received increasing media attention, from magazine articles to books to television shows. Given this backdrop, the lack of behavioral research on downsizing is striking – a gap that the present research begins to address by investigating actual effectiveness, as well as lay beliefs, concerning downsizing strategies.

Second, we identify an important downside to order, which inhibits rather than facilitates downsizing, thereby adding to the emerging messy/tidy literature. Although research has linked disorder to self-control failures and immorality (e.g., Chae and Zhu 2014; Liljenquist et al. 2010; Mazar and Zhong 2010; Parker-Pope 2008), we add to the literature showing that disorder can be helpful (Abrahamson and Freedman 2007;

Denegri-Knott and Parsons 2014; Doucé et al. 2014; Vohs et al. 2013). Importantly, consumer lay beliefs run contrary to this finding – consumers associate order with more effective downsizing and, as a result, may follow effortful and counterproductive downsizing advice that emphasizes organization and tidying (e.g., Trulia 2016).

Third, we extend the literature on selection and rejection as decision-making strategies by showing that the well-established difference in rejection versus selection (Levin et al. 2002; Park et al. 2000) in consideration set formation extends to downsizing. This finding runs contrary to lay beliefs that favor rejection given its alignment with the objective of downsizing (i.e., getting rid of things). Moreover, we establish dis/order as a novel moderator, with greater differences in selection/rejection emerging when items are disordered rather than ordered. That is, we extend past research examining aspects of the items under consideration (e.g., their valence (Laran and Wilcox 2011; Meloy and Russo 2004); hedonic/utilitarian (Dhar and Wertenbroch 2000)) to also consider their organization.

Fourth, we contribute to the literature on maximizing (Chowdhury et al. 2009; Huang and Zeelenberg 2012; Iyengar et al. 2006; Ma and Roesse 2014; Schwartz et al. 2002) by showing how maximizing alters the impact of disorder on downsizing effectiveness. Indeed, consumers retain fewer items when selecting from disorder because disorder inhibits the comparisons that drive retention of items. (Comparisons, especially within category, increase decision conflict and justify inclusion of items under a selection strategy.) As a result, in a downsizing context, maximizing tendencies are an advantage (disadvantage) when selecting from disorder (order).

Our research is not without limitations. First, we acknowledge the use of scenario-based studies that may raise questions about external validity. To address this concern, we augmented these findings with real-behavior evidence via a consequential laboratory study (4A) as well as survey evidence of real behavior (4B, 7) and surveyed professionals in their field of expertise (1C). Future research of this nature is certainly needed, however. Second, we limited our investigation to only two aspects of downsizing – dis/order and selection/rejection strategy (as well as maximizing as a theoretically relevant consumer moderator). We acknowledge that there may be other, potentially even more important, aspects of downsizing that we do not examine and that merit attention. Indeed, there are many possible avenues for future research, and we subsequently discuss several areas that strike us as potentially fruitful.

Our research focused on two aspects of downsizing – dis/order and selection/rejection – and future research is encouraged to identify and understand other important dimensions of downsizing and downsizing approaches. There are many potential avenues to explore, as downsizing advice runs the gamut from the practical (e.g., have you worn it in the past year?) to the emotional (e.g., do you love it?) to the spiritual (e.g., have you thanked it?) (Kondo 2014). We suggest that future research is merited on those dimensions of downsizing that might alter downsizing effectiveness. For example, what is the impact of temporal perspective (Schelling 1982) on downsizing – does looking ahead (to future use) or back (to past use) help or hinder downsizing? The distribution of downsizing activity (i.e., massed or spaced) (Dempster 1989; Lakshmanan, Lindsey, and Krishnan 2010) is also intriguing – for example, is it better to downsize all at once (e.g., spring cleaning) or spread it out over the year? Regarding the

latter, we also encourage research on the nature of the items to be downsized: should downsizing of hedonic/utilitarian items (e.g., childhood memorability vs. office supplies; Dhar and Wertenbroch 2000), high and low-value items (e.g., reusable items vs. disposables; Ertz et al. 2017), or used and like-new items (Neto, Bloemhof, and Corbett 2016) be approached differently?

Our research focused on the number of items retained after downsizing, examining both consumer lay beliefs and actual effectiveness of downsizing strategies. However, there are other important aspects of downsizing that merit consideration. In particular, it would be helpful to understand consumer satisfaction as a function of downsizing. For example, how does downsizing strategy and dis/order affect customer satisfaction with both the outcome of downsizing and the downsizing process (Botti and Iyengar 2006)? Although downsizing effectiveness is facilitated by selecting from disorder, will consumers be satisfied? One possibility is that satisfaction will indeed track downsizing effectiveness, driven by improved downsizing outcomes (Wright 1975); another possibility is that satisfaction will align with lay beliefs about downsizing if, for example, consumers feel more comfortable with a less effective downsizing process (Mogilner, Rudnick, Iyengar 2008). The latter could perhaps account for why consumer lay beliefs are erroneous: if the actual effectiveness of downsizing strategies are difficult to judge, then consumers may rely upon seemingly sensible strategies that ‘feel right’ (cf. Avnet, Pham, and Stephen 2012).

Relatedly, we also encourage investigation of the affect that accompanies downsizing: for example, some consumers may feel hope and pride (Cavanaugh et al. 2011) when downsizing, while other consumers may feel guilt and regret (Zeelenberg

1999). If so, then a better understanding of those felt emotions and how to manage them may be important for consumers to persist when downsizing. For example, how do emotions arising from attachment to belongings (Winterich, Reczek, and Irwin 2017) affect downsizing? How can consumers mitigate negative emotions arising during downsizing from waste aversion (both financial waste and waste arising from unused utility; Bolton and Alba 2006)?

Another interesting avenue for downsizing research focuses on who is downsizing and why? Indeed, people downsize for myriad reasons, from younger people wishing to simplify, to retirees moving to a smaller home, to consumers forced to downsize for reasons of economy or space. We began to explore consumer characteristics that moderate downsizing effectiveness in our investigation of maximizing tendency, but what other characteristics of consumers (e.g., age, regulatory focus, analytic/intuitive decision-makers) affect downsizing? Likewise, how do consumer motives and constraints affect downsizing? For example, how does intrinsic versus extrinsic motivation (Ryan and Deci 2000) affect downsizing? Is downsizing more effective when undertaken on one's own or jointly with others (Lowe et al. 2019)? One potentially fruitful direction is to study the impact of professional organizers on consumer downsizing: how is downsizing affected and what are the consequences for effectiveness, satisfaction, and so on?

We close with a discussion of the consequences of our research not only for consumer and societal welfare but also for marketers in relevant industries (such as home organization and storage). First, we find that consumers' lay beliefs surrounding downsizing are erroneous: consumers favor the seemingly sensible strategy of rejecting

from order (i.e., getting rid of items from a tidy set), whereas we find that selecting from disorder (i.e., identifying items to keep from a messy set) is more effective. Hence, lay beliefs may undermine consumers' own efforts to downsize. Second, downsizing advice – prevalent in many forms in the popular media – also appear, in some cases, to be erroneous. Professional organizer Peter Walsh, for example, suggests filling a trash bag with things you no longer want (i.e., rejecting) (Okura 2015). Indeed, the burgeoning industry of professional organizers (such as NAPO, who collaborated in a survey as part of this project (study 1C)) are keenly interested in how best to tailor the advice they give to their clients.

Third, this research also has important implications for various industries related to downsizing. On the one hand, some industries arguably benefit from ineffective downsizing: for example, an accumulation of goods has led to the \$38 billion self-storage industry (Harris 2019), and the 2021 projection of home organization product sales to \$11.8 billion (Freedonia Group 2017). These industries may be able to leverage consumers' erroneous beliefs about downsizing to fill their coffers, both literally and figuratively. On the other hand, other industries benefit from effective downsizing. For example, the secondhand clothing economy (e.g., thrift shops, consignment stores) is projected to grow 50% larger than fast fashion within the next 10 years, reaching \$64 billion (Reints 2019). More broadly, the used goods industry (including fashion, furnishings, entertainment) has outperformed the overall retail market over the past five years (IBISWorld 2019), and this industry benefits from the "rotation" rather than accumulation of goods by consumers (thredUP 2019).

Finally, our research has important, albeit mixed, implications for sustainability. On the one hand, effective downsizing could lead to enhanced recycling and ‘rotation’ of household goods, with the potential to reduce consumption and its harmful consequences for our planet. On the other hand, downsized items could instead end up in landfill and, if downsizing merely fuels further accumulation, lead to further consumption and harmful environmental consequences. The fashion industry again provides a striking example, with 92 million tons of textile waste from the fashion industry (combined with enormous consumption of water and emission of greenhouse gases), as well as 12.8 million tons of clothing sent to landfills annually by consumers (Rudenko 2018). Hence, a better understanding of downsizing – and its consequences for consumer and societal welfare – is sorely needed.

3.18 Essay 2 Appendices

3.18.1 Appendix A: Ancillary Analyses

Study 2: To assess how downsizing specifically occurs, we examined whether participants reduced categories of consumption or reduced the number of items within categories. First, we examined the number of unique categories retained (out of 10):

ANOVA revealed main effects of dis/order ($M_{\text{disorder}} = 9.40$ vs. $M_{\text{order}} = 9.69$; $F(1, 167) = 5.45$, $p = .02$, partial $\eta^2 = .03$) and selection/rejection ($M_{\text{rejection}} = 9.74$ vs. $M_{\text{selection}} = 9.34$; $F(1, 167) = 11.09$, $p = .001$, partial $\eta^2 = .06$); the interaction was NS ($F(1, 167) = .08$, $p = .77$, partial $\eta^2 = .001$). That is, disorder and selection led to retention of fewer items.

Second, we examined the average proportion of items within each category retained, which revealed main effects of dis/order ($F(1, 167) = 4.87$, $p = .03$, partial $\eta^2 = .03$) and selection/rejection ($F(1, 167) = 93.47$, $p < .001$, partial $\eta^2 = .36$), qualified by their interaction ($F(1, 167) = 10.86$, $p = .001$, partial $\eta^2 = .06$). Under rejection, dis/order had no effect ($M_{\text{disorder}} = .62$ vs. $M_{\text{order}} = .61$; $F(1, 167) = .60$, $p = .44$, partial $\eta^2 = .004$); under selection, fewer items were retained in the disordered versus ordered condition ($M_{\text{disorder}} = .50$ vs. $M_{\text{order}} = .55$; $F(1, 167) = 15.05$, $p < .001$, partial $\eta^2 = .08$).

A bootstrapping analysis was conducted with both measures in parallel, with dis/order (coded as 1 = disorder, 0 = order) as the independent variable, strategy (coded as 1 = select, 0 = reject) as the moderator, and final number of items retained as the dependent variable. For proportion of items within category, the indirect effect was supported under selection (PROCESS model 8, $b = -1.97$, $SE = .63$, BC 95% CI = [-3.17, -.72]) but not rejection ($b = .39$, $SE = 0.37$, BC 95% CI = [-.32, 1.11]) and, moreover, the index of moderated mediation was significant (Index = -2.36, $SE = .74$, BC 95% CI = [-3.85, -.89]). For number of categories, the indirect effect was supported under rejection (PROCESS model 8, $b = -.43$, $SE = .21$, BC 95% CI = [-.85, -.04]) but not selection ($b = -.55$, $SE = 0.39$, BC 95% CI = [-1.34, .17]); however, the index of moderated mediation was not significant (Index = -.12, $SE = .42$, BC 95% CI = [-.97, .69]). These results support moderated mediation and replicate the findings in study 3: the interaction of

dis/order and selection/rejection on number of items retained arises due to differences in the retention of items within category (which is consistent with our theorizing that disorder inhibits comparisons within category). We encourage future research to better understand how consumers make these downsizing decisions both within and across category as a function of decision strategy, consumer and context (see general discussion).

Follow-Up Study: We ran a follow-up study to replicate studies 2 and 3 in a new domain – household items. Per H1, we predict that consumers will retain fewer items when selecting from disorder.

Method: The study design was a 2 (dis/order) x 2 (select vs. reject) study. Undergraduate students ($n = 218$; 47% female; median age = 19) participated in exchange for extra credit in an introductory business course. They imagined they needed to downsize to about half of the current items for a new, smaller bookcase (shown in pictures; no range was specified on the number of items downsized). Dis/order and selection/rejection were manipulated as in study 2. There were 50 total items in various categories including fiction books, nonfiction books, magazines, candles, figurines, vases, notecards, games/cards, picture frame, basket, and coaster set. After downsizing, participants answered manipulation checks for selection/rejection (same as study 2) and disorder (same as study 3) and also provided background information (e.g., demographics).

Results: Manipulation check. Participants used more of a rejection strategy in the rejection versus selection condition ($M_{rejection} = 4.52$ vs. $M_{selection} = 2.43$; $F(1, 214) =$

108.59, $p < .001$, partial $\eta^2 = .34$). (Unexpectedly, rejection was also higher under disorder ($M_{disorder} = 3.80$ vs. $M_{order} = 3.17$; $F(1, 214) = 9.89$, $p = .002$, partial $\eta^2 = .04$) – we do not observe this in any other study and so assume it is spurious.) Participants also rated the items as more organized in the order versus disorder condition ($M_{order} = 4.06$ vs. $M_{disorder} = 1.81$; $F(1, 214) = 186.43$, $p < .001$, partial $\eta^2 = .47$). Other effects were NS (p 's $> .34$). These results supported the manipulations.

Items retained. Analysis of the final number of items retained revealed a main effect of strategy ($F(1, 214) = 27.53$, $p < .001$, partial $\eta^2 = .11$) and a null effect of dis/order ($F(1, 214) = 2.04$, $p = .15$, partial $\eta^2 = .009$), qualified by their interaction ($F(1, 214) = 5.13$, $p = .02$, partial $\eta^2 = .02$). When rejecting, dis/order had no effect on number of items retained ($M_{disorder} = 26.11$ vs. $M_{order} = 25.60$; $F(1, 214) = .36$, $p = .55$, partial $\eta^2 = .002$). When selecting, participants retained fewer items under disorder versus order ($M_{order} = 23.80$ vs. $M_{disorder} = 21.56$; $F(1, 214) = 6.78$, $p = .01$, partial $\eta^2 = .03$). These results support H1 and replicate the pattern of studies 2 and 3 in a new downsizing context.

Study 5: Additional Analyses. Additional measures were taken in the study and are grouped based on a factor analysis that yielded four factors as shown in the table 3.1 below (difficulty reported in the main text). The factors reflect negative feelings (such as anxiety and regret) and positive feelings (such as hope and pride) in response to the process of downsizing. ANOVA on these potential process measures yielded non-significant effects of dis/order (see table 3.1). In addition, mediation analysis with these process measures included in parallel (with difficulty and processing, as reported in the

main text) supported processing approach as the only significant mediator (PROCESS model 4, $b = -.51$, $SE = .35$, BC 90% CI = [-1.14, -.02]); all other indirect effects were NS. We also assessed serial mediation of processing approach with each variable and the only serial mediation path to receive support was difficulty → processing, as reported in the main text. These analyses help rule out alternative explanations based on positive and negative feelings. Although we would not be surprised that downsizing evokes an affective response, the evidence suggests that those feelings are not responsible for the differences in items retained observed in our work.

Table 3.1
Study 5: Additional Analysis

Study/Domain	Construct	Measurement Items (1 - 7 scale)	Dis/order	Means (SD)	F -test
5/Clothing	Positive Feelings $\alpha = .91$	Enjoyable; Pleasant; Happy; Hopeful; Enthusiastic; Determined; Satisfied; Proud; Lighter in spirit	Order	3.65 (1.23)	$F(1, 118) = 2.72, p = .10$
			Disorder	3.28 (1.28)	
	Negative Feelings $\alpha = .86$	Stressful; Anxiety-inducing; Guilty or ashamed; Regretful; Sad; Upset; Distressed; How it feels bad to get rid of things	Order	2.53 (1.06)	$F(1, 118) = 1.26, p = .26$
Disorder			2.76 (1.17)		
	Good Feelings	How it feels good to get rid of things	Order	2.85 (1.66)	$F(1, 116) = 2.32, p = .13$
			Disorder	2.39 (1.67)	

Rejection. For completeness, we note that the full design of the study was a 2 (dis/order) x 2 (select/reject) between-subjects design (with a total n of 247), with six participants (in the reject condition) eliminated due to failure to follow instructions. After downsizing, participants responded to manipulation checks for selection/rejection (same as in study 2).

Participants used more of a rejection strategy in the rejection versus selection conditions ($M_{rejection} = 3.64$ vs. $M_{selection} = 2.11$; $F(1, 237) = 55.80, p < .001$, partial $\eta^2 = .19$). An ANOVA of the number of items retained revealed main effects of dis/order ($F(1, 237) = 10.32, p = .002$, partial $\eta^2 = .04$) and strategy ($F(1, 237) = 60.20, p < .001$, partial $\eta^2 = .20$), qualified by their two-way interaction ($F(1, 237) = 22.85, p < .001$, partial $\eta^2 = .09$). When rejecting, dis/order had no effect on number of items retained ($M_{disorder} = 27.23$ vs. $M_{order} = 26.15$) ($F(1, 237) = 1.20, p = .27$, partial $\eta^2 = .005$). When selecting, participants retained fewer items in the disordered versus ordered condition ($M_{disorder} = 18.54$ vs. $M_{order} = 24.08$) ($F(1, 237) = 32.66, p < .001$, partial $\eta^2 = .12$). These findings are consistent with the results of studies 2 - 4 and our theorizing in H1.

Because our interest at this point in the manuscript lay in understanding dis/order differences under selection, we excluded the rejection conditions from the main text.

3.18.2 Appendix B: Study Stimuli

Study 1A: Imagine that you want to reduce your number of belongings. You open your closet as pictured below.

*Order condition**Disorder condition*

- What do you think is best to do when approaching this task?
(1 = Choose what to keep (and get rid of the rest), 7 = Choose what to get rid of (and keep the rest))
- When approaching this task, do you think it is best if items in the closet are first:
(1 = Tidy (i.e., organized and sorted), 7 = Messy (i.e., disorganized and unsorted))
- Please enter your age (18, 19, 20, 21, 22+)
- What is your gender? (male, female)

Study 1B: Imagine that you are moving next month. The home you are moving to is much smaller than your current home. Specifically, the closet in your new room will be smaller than the size of your current closet. In preparation for downsizing, you have visited a number of professional organizers' websites seeking advice as to the best way to reduce your clothing. On the following pages, read advice from four different organizers and answer the associated questions.

Organizer's Advice:

- "The best way to reduce the number of items is to select the items you would like to keep from a tidy pile of items."
- "In order to reduce your items, you should select the items you would like to keep from a messy pile of clothes."
- "I advise my clients who are looking to minimize their number of clothing items to focus on rejecting the items you don't want any more - make a pile of the items to get rid of from a tidy pile of clothes."
- "When I am trying to get rid of items from my closet, I reject the items I don't want any more from a messy pile of clothes."

Questions after each piece of advice:

- How likely are you to follow the advice of this expert?
(1 = Not at all likely, 7 = Extremely likely)

- How effective do you believe this strategy would be for downsizing?
(1 = Not at all effective, 7 = Extremely effective)

Demographic questions:

- Your gender (male, female, prefer not to say)
- Your age (enter a whole number)

Study 1C: In the first part of the survey, we are interested in your reactions to strategies that people might use when downsizing. For instance, would you recommend they focus on selecting items to keep, or should they focus on identifying items they want to get rid of? Does it matter if the belongings are organized or disorganized before they start? We will present four strategies consumers could follow when downsizing their belongings. Please read each strategy and answer the associated questions.

Strategies:

- "The best way to reduce the number of items is to tidy up before you begin downsizing and then select the items you would like to keep."
- "In order to reduce your items, you should select the items you would like to keep. Do not tidy up before you start."
- "A good way to reduce is to tidy up before beginning and focus on rejecting the items you don't want any more. Make a pile of the items to get rid of."
- "When trying to get rid of items from the closet, don't tidy up before beginning. Identify the items you don't want any more and make a pile of "rejects".

Questions after each piece of advice:

- How effective do you believe this strategy would be for downsizing?
(1 = Not at all effective, 6 = Extremely effective)
- How likely would you be to give this advice to a client?
(1 = Not at all likely, 6 = Extremely likely)

Demographic questions:

- Your gender (male, female, prefer not to say)
- Your age (18-29, 30-39, 40-49, 50-59, 60-69, 70+)

Study 2: Imagine that you are studying abroad this semester. The apartment you are moving to is much smaller than your current apartment. The closet in your new room will be smaller than the size of your current closet. You therefore can only keep, at most, [have to get rid of at least] half of your current clothes.

*Order Condition**Disorder Condition*

It is moving day! You pull out all of the items in your closet and drawers and place them on your bed in piles as pictured above. You decide to put the items you will keep [get rid of] on one side of the bed.

Drag the items you will keep [get rid of] into the box on the right. There are 50 total items. You can keep [must get rid of] between 20-30 items.

Items to Keep [Get Rid Of] in Closet:

*List seen in order or randomized

- Jeans/pants (n = 7)
 - Shirt/Blouse (n = 7)
 - Sweater (n = 7)
 - Sweat shirt/hoodie (n = 5)
 - Long sleeve shirt (n = 5)
 - T-Shirt (n = 5)
 - Shoes (i.e., boots, sandals, etc.) (n = 5)
 - Jacket (n = 4)
 - Sweatpants/athletic wear (n = 3)
 - Suit (n = 2)
- In the scenario, to what extent were you thinking about the items you wanted to keep versus the items you wanted to get rid of?
(1 = Definitely the items I wanted to keep, 7 = Definitely the items I wanted to get rid of)
 - What is your gender? (male, female)
 - Please enter your age. (18, 19, 20, 21, 22+)

Study 3: Imagine that over the summer you took a trip to the beach. While you were there you purchased a large amount of saltwater taffy. You are feeling a little tired of the taffy and it's taking up too much cupboard space, so you've decided to downsize your taffy stash.



Order Condition

Disorder Condition

Your left over saltwater taffy is pictured above. These candies have been in your apartment since your beach trip over three months ago. The flavors you originally purchased were Peppermint, Orange, Lemon, Chocolate, Strawberry, Licorice, Banana, Vanilla, and Watermelon. You want to keep what [get rid of enough so the remainder] will fit in a zip lock snack bag. Please click the next button when you are ready.

Drag the candies you will keep [get rid of] into the box on the right. There are 50 total candies. You can keep [must get rid of] 25 or fewer candies.

Candies to Keep [Get Rid of]:

*List seen in order or randomized

- Vanilla (n = 5)
 - Licorice (n = 5)
 - Chocolate (n = 7)
 - Orange (n = 5)
 - Lemon (n = 5)
 - Watermelon (n = 5)
 - Lime (n = 5)
 - Strawberry (n = 7)
 - Peppermint (n = 6)
- As you were sorting candy items, to what extent were you thinking about the items you wanted to keep versus the items you wanted to get rid of?
(1 = Definitely the items I wanted to keep, 7 = Definitely the items I wanted to get rid of)
 - How organized did the candies initially feel to you?
(1 = Completely disorganized, 7 = Completely organized)

- What is your gender? (male, female)
- Please enter your age. (18, 19, 20, 21, 22+)

Follow-up Study:



Imagine that you bought a new bookshelf to replace your old one. The bookshelf you bought, as pictured above, is much smaller than your old bookshelf. You therefore can only keep, at most, [have to get rid of] half of the current items on your bookshelf.



Order Condition

Disorder Condition

You place all the items from your bookshelf on a table as pictured above. You decide to put the items you will keep [get rid of] on one side of the table.

Drag the items you will keep [get rid of] into the box on the right. There are 50 total items. You can keep [must get rid of] about half of the items.

Items to Keep [Get Rid Of]:

*List seen in order or randomized

- Fiction Book (n = 7)
- Nonfiction Book (n = 7)
- Magazine (n = 7)
- Candle (n = 4)
- Figurine (n = 3)
- Vase (n = 4)
- Notecards (n = 4)
- Games/cards (n = 5)

- Picture frame/holder (n = 4)
- Basket (n = 3)
- Coaster set (n = 2)
- In the scenario, to what extent were you thinking about the items you wanted to keep versus the items you wanted to get rid of?
(1 = Definitely the items I wanted to keep, 7 = Definitely the items I wanted to get rid of)
- How organized did the pile of items you initially saw feel to you?
(1 = Completely disorganized, 7 = Completely organized)
- What is your gender? (male, female)
- Please enter your age. (18, 19, 20, 21, 22+)

Study 4A: In this survey, you will be asked to engage in a decision making task. As part of the task, you will be asked to read a scenario and then actually sort candies. If you have any questions during the survey, please let the research assistant know. Please click the next button when you are ready.

Imagine that over the summer you took a trip to the beach. While you were there you purchased a large amount of saltwater taffy. It is the end of the summer season and you still have a good amount left over from your beach vacation. You are feeling a little tired of the taffy so you decide to reduce the number of pieces you have.



Order Condition Disorder Condition

The left over saltwater taffy is located in the box on your desk. These candies have been in your apartment since your beach trip over three months ago. The flavors you originally purchased are Vanilla, Peppermint, Cherry, Root Beer, Strawberry, Watermelon, Lemon, Licorice, Lime, Molasses, Orange, Chocolate, and Banana. You want to reduce the number of candies you currently have by about half. Please click the next button when you are ready.

We would like you to decide which saltwater taffy candies you would like to keep for yourself. Select the candies from the box that you would like to keep and put them **INSIDE** the snack bag located on the table. You will actually get to keep these candies today. We do ask that you not eat the candy while you are in the lab. These are for you to

take away. Any candies you don't want can remain in the box. Be sure to evaluate all the items carefully when making your decision. Please click next when you are ready to start the task.

You may start the selection task now. Please select the candies you want to keep and put them inside the snack bag. The candy you put in the bag is yours to take at the end of the session. Please do not eat any of it in the lab. Click next when you are finished.

Please raise your hand and let the research assistant know you have completed the sorting task. The RA will collect the leftover candy. Once the RA has done so, please click next to move on in the survey.

- As you were deciding which candy items to put in the baggie, to what extent were you thinking about the items you wanted to keep versus the items you wanted to get rid of?
(1 = Definitely the items I wanted to keep, 7 = Definitely the items I wanted to get rid of)
- How organized did the candies feel to you?
(1 = Completely disorganized, 7 = Completely organized)
- What is your gender? (male, female)
- Please enter your age. (18, 19, 20, 21, 22+)

Study 4B:

- What percentage of the total items in your room did you keep when packing?
_____ %
- How messy or tidy was your room before you started packing to move? (1 = Messy, 7 = Tidy)
- While going through your belongings, did you focus on identifying... (1 = Items you wanted to get rid of, 7 = Items you wanted to keep)
- How difficult was it for you to sort through your belongings while packing up? (1 = Not at all difficult, 7 = Very difficult)
- Think about the items you didn't take with you when packing up. What percentage of the items were (Please total to 100%)

Basically trash from your room	_____ %
Usable items that you didn't need/want	_____ %
Other (please specify) _____	_____ %
Total = 100	
- What is your gender? _____ Male _____ Female
- Your age _____

Study 5: Imagine that you are studying abroad this semester. The apartment you are moving to is much smaller than your current apartment. The closet in your new room will be smaller than the size of your current closet. You therefore can only keep, at most, [have to get rid of at least] half of your current clothes.



Order Condition

Disorder Condition

It is moving day! You pull out all of the items in your closet and drawers and place them on your bed in piles as pictured above. You decide to put the items you will keep [get rid of] on one side of the bed.

Drag the items you will keep [get rid of] into the box on the right. There are 50 total items. You can keep [must get rid of] about half of the items.

Items to Keep [Get Rid Of] in Closet:

*List seen in order or randomized

- Jeans/pants (n = 7)
 - Shirt/Blouse (n = 7)
 - Sweater (n = 7)
 - Sweat shirt/hoodie (n = 5)
 - Long sleeve shirt (n = 5)
 - T-Shirt (n = 5)
 - Shoes (i.e., boots, sandals, etc.) (n = 5)
 - Jacket (n = 4)
 - Sweatpants/athletic wear (n = 3)
 - Suit (n = 2)
- In the scenario, to what extent were you thinking about the items you wanted to keep versus the items you wanted to get rid of?
(1 = Definitely the items I wanted to keep, 7 = Definitely the items I wanted to get rid of)
 - In the scenario, how messy or tidy did the clothes appear to you?

(1 = Extremely messy, 7 = Extremely Tidy; 1 = Disorganized, 7 = Organized)

- When individuals make decisions, sometimes they look at a single item and decide whether they want to keep or get rid of that item in isolation, without considering other items that might be similar. This is called alternative based processing. Other times, individuals are looking at items within the same category and comparing items side by side. This is called attribute based processing. To what degree do you believe you engaged in alternative based vs. attribute based processing while you were sorting the clothes.
(1 = Definitely Alternative based, 7 = Definitely Attribute based)
- How difficult did you find the task of sorting your belongings?
(1= easy to do, 7 = difficult to do; 1 = simple, 7 = challenging; 1 = smooth, 7 = bumpy; 1 = easy to concentrate, 7 = difficult to concentrate)
- To what extent did you find the sorting task (1 = not at all, 7 = extremely):
(Enjoyable, Pleasant, Stressful, Anxiety-inducing)
- To what extent did you find the sorting task make you feel (1 = not at all, 7 = extremely):
(Happy, Hopeful, Guilty or ashamed, Regretful, Enthusiastic, Determined, Sad, Upset, Distressed, Satisfied, Proud, Lighter in spirit)
- As you were deciding what to keep/get rid of from your closet, to what extent did you focus on (1 = not at all, 7 = very much):
(How it feels good to get rid of things; How it feels bad to get rid of things)
- What is your gender? (male, female)
- Please enter your age. (18, 19, 20, 21, 22+)

Study 6: In the first part of the survey, we will ask you a number of personality questionnaires. They may seem redundant, but these types of questions allow us to better understand the effectiveness of messages among diverse groups of individuals. Click next to begin.

- Read each statement below, and indicate to what extent it describes you (1 = completely disagree, 7 = completely agree).
 - *Alternative search* subscale
 - When I watch TV, I channel surf, often scanning through the available options even while attempting to watch one program.
 - When I am in the car listening to the radio, I often check other stations to see if something better is playing, even if I'm relatively satisfied with what I'm listening to.
 - I treat relationships like clothing: I expect to try a lot on before I get the perfect fit.
 - No matter how satisfied I am with my job, it's only right for me to be on the lookout for better opportunities.

- I often fantasize about living in ways that are quite different from my actual life.
- I'm a big fan of lists that attempt to rank things (the best movies, the best singers, the best athletes, the best novels, etc.).
- *Decision difficulty* subscale
 - I often find it difficult to shop for a gift for a friend.
 - When shopping, I have a hard time finding clothing that I really love.
 - Renting movies is really difficult. I'm always struggling to pick the best one.
 - I find that writing is very difficult, even if it's just writing an email to a friend, because it's so hard to word things just right. I often do several drafts of even simple things.
- *High standards* subscale
 - No matter what I do, I have the highest standards for myself.
 - I never settle for second best.
 - Whenever I'm faced with a choice, I try to imagine what all the other possibilities are, even ones that aren't present at the moment.
- Please rate how much you agree with each of the following statements. (1 = strongly disagree, 7 = strongly agree) (Haws et al. 2012)
 - Getting rid of stuff is difficult for me.
 - I tend to hold onto my possessions.
 - I do not like to dispose of possessions.
 - Unless I have a really good reason to throw something away, I keep it.
- To what extent do you agree or disagree with each of the following statements? (1 = strongly disagree, 7 = strongly agree) (Haws et al. 2014)
 - It is important to me that the products I use do not harm the environment.
 - I consider the potential environmental impact of my actions when making many of my decisions.
 - My purchase habits are affected by my concern for our environment.
 - I am concerned about wasting the resources of our planet.
 - I would describe myself as environmentally responsible.
 - I am willing to be inconvenienced in order to take actions that are more environmentally friendly.

You will now move to the next part of the survey.

[same stimuli as Study 5]

- In the sorting task, I focused on...
 - (1 = Items I wanted to get rid of, 7 = Items I wanted to keep; 1 = Choosing what I did NOT want; 7 = Choosing what I DID want)
- How would you rate the clothing pile that you saw?
 - (1 = Disorganized, 7 = Organized; 1 = Disordered, 7 = Ordered)
- Your gender (male, female, prefer not to say)
- Your age (please enter a whole number)

Study 7:

- Think back to the most recent time that you downsized. Discuss the reason for downsizing and the areas you reduced (e.g., clothing in closet, books on bookshelf).
- Briefly describe the state of the space you were downsizing before you started to downsize. Was it messy (i.e., disorganized) or tidy (i.e., organized)?
- What percentage of the total items that were in the space when you started did you ultimately end up keeping? (0-100%)
- Your gender (male, female, prefer not to say)
- Your age (please enter a whole number)
- Please rate how much you agree with each of the following statements (1 = strongly disagree, 7 = strongly agree):
 - When I am in the car listening to the radio, I often check other stations to see if something better is playing, even if I'm relatively satisfied with what I'm listening to.
 - When shopping, I have a hard time finding clothing that I really love.

Chapter 4

CONCLUSION

At some point, most consumers will face a loss of time, money, or space in their lifetime, either imposed or by choice. When consumers cannot borrow against future time, income, or space, the loss will lead to changes in preferences. My dissertation examines how preferences shift after experiencing a loss.

Each dissertation essay makes unique theoretical, managerial, and consumer welfare contributions. The first essay examines how loss affects the preferences of the person and establishes that a loss can begin the preference stabilization process. Specifically, dealing with a budget contraction allows a consumer to prioritize what is most important thereby leading to a change. Preferences are restructured and stabilized throughout the budget contraction process. I use a within-person design in order to examine the change that results from coping with a budget loss. Additionally, from a managerial perspective, this essay provides several potential opportunities that might arise for marketers. For example, firms may use coupons or other special promotions to ease the loss and turn it into a modest contraction.

The second essay further delves into the realm of loss in the context of downsizing. In this essay I explore how in a loss situation, different environmental contexts (i.e., messy vs. tidy spaces) can affect preferences and choice. I find that selecting items from a disorganized mess leads to retaining the fewest number of items. This research begins to investigate downsizing, an important but poorly understood marketplace phenomenon. Additionally, from a consumer welfare perspective this essay aids those who want or

need to downsize. Consumers' lay beliefs favor a strategy (i.e., rejecting items from an organized pile) that actually will not lead them to reduce the greatest number of items. From a managerial perspective, secondhand stores may glean insights into the consumer downsizing process and how the marketplace may change depending on whether the used items are more, or less, organized.

4.1 Future Directions

The two essays in my dissertation examine constraints and loss that are not necessarily financial. The 2019 U.S. government shutdown highlighted that many consumers live close to a financial precipice. Jumping off from my dissertation research, many questions emerge. For instance, I have begun examining how individuals fund necessary expenses during periods of financial constraint. Will consumers dip into their savings or simply go without? If consumers do spend a portion of their savings, how does spending savings shift preferences? What if that savings has been earmarked for something else, such as a child's college tuition? Preliminary findings from the U.S. government shutdown survey in essay 1 show that consumers tend to use a mix of strategies when coping with a temporary financial contraction, including cutting spending, using savings, finding extra work, and using their credit card. Borrowing money is typically a last resort. Prior research has shown that consumers don't like using their savings to fund such shortfalls. People will take on debt (Gross and Souleles 2002) and keep "valued" savings accounts intact (i.e., for a child, car) leading to costly borrowing (Sussman and O'Brien 2016). Individuals avoid spending earmarked funds

due to feelings of guilt (Heath and Soll 1996; Soman and Cheema 2011). Oftentimes people don't want to spend their savings because they fear they won't replenish them (Morduch 2009). Other preliminary testing suggests that after experiencing a loss, people tend to spend savings for necessary expenses over using their credit card. Further delving into this area could be fruitful to better understand how people cope with monetary loss.

In another related project, I have started to examine windfall gains in relation to the timing of loss. Windfalls are more likely to be spent frivolously compared to ordinary income. For instance, students receiving an unanticipated payment for participation were more likely to spend it on snacks compared to those receiving an anticipated payment (Arkes et al. 1994). Also, people are more likely to buy hedonic items (i.e., massage, concert tickets) with lottery winnings compared to regular income (O'Curry and Strahilevitz 2001). The preference to spend windfalls on hedonic versus utilitarian depends on the source of the gain (Levav and McGraw 2009). How will a windfall be spent after experiencing a loss? Preliminary evidence suggests that if a necessary expense occurs after experiencing a loss, a windfall received after both events will be used to fund the necessary expense over purchasing a hedonic good or experience.

Given the rise of the sharing economy, after experiencing a loss, will consumers participate in the sharing economy rather than spend their savings? This could depend on the amount the person has in savings and whether their savings are earmarked or not. If a person doesn't have savings, then it is possible that participating in the sharing economy will be preferred over using their credit card. Additionally, if the motivation to share is a result of a loss, what happens to their willingness to accept as a provider? If they are highly motivated to extract as much from the asset as possible, there could be a

magnification of the endowment effect. But if the loss is temporary and instills a sense of empathy, it could reverse the endowment effect.

I am also interested in how loss might affect risk perceptions. In my essay I examined how preference refinement can be a good thing by stabilizing preferences and allowing a consumer to truly understand what they like and dislike. However, can there be unintended consequences associated with preference refinement? Prior work suggests that consumers will become more risk seeking in their choices when they deal with sadness over a loss (Garvey, Meloy, and Shiv 2017; Raghunatham and Pham 1999; Raghunatham, Pham, and Corfman 2006). The current work suggests that after experiencing a loss if a consumer decides to refine his/her investment portfolio, this might lead to a reduction in the number of options/investments resulting in a less diversified portfolio (i.e., a riskier outcome). This could have significant public policy implications.

Finally, one more future direction would be to explore how a loss in one domain which prompts preference refinement affects other areas of consumption. For example, after experiencing a financial loss, is a consumer more apt to begin downsizing their belongings? If downsizing does occur, will a consumer's preferences for those items retained be more stable? In essence, does a loss experienced in one area cascade to other areas and transfer preference refinement?

Overall, the results from the two essays contribute to an improved understanding of how consumers' preferences shift after experiencing a loss of time, money, or space. This work provides many fruitful avenues for future research. Both marketers and

consumers' alike can glean insights from this dissertation as it makes valuable contributions to the literature.

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PH.D. DISSERTATION AND COMMITTEE

Dissertation Title: "Preference Shifts After Loss"

Chair: Margaret G. Meloy
Committee Members: Hans Baumgartner, Lisa E. Bolton, and Karen Gasper
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Essay 1: "Preference Refinement After A Budget Contraction"

Essay 2: "Disorder and Downsizing"

RESEARCH INTERESTS

Judgment and Decision Making
Consumer Preferences
Consumer Financial Decisions and Savings Behavior
Sensory Marketing