Disorder and Downsizing

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Contribution Statement

Research on the topic of downsizing or decluttering is surprisingly scant, despite its ubiquity in consumers' lives. Our research makes several contributions to the literature.

First, we are the first (to our knowledge) to systematically examine the process and consequences of downsizing. Downsizing is a poorly understood marketplace phenomenon with important consequences for consumers and society. We begin to address the gap in the literature by investigating how dis/order affects downsizing in a series of nine focal studies (with seven additional studies reported in the web appendix)

Second, we identify an important drawback to order. Specifically, though consumers seemingly believe that they need to tidy before downsizing, 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 shed light on the underlying psychological process: order enhances the comparisons within category that drive the tendency to retain items (and therefore undermines the downsizing process). As a result, order and the comparisons it facilitates are a disadvantage, thereby adding to our understanding of when comparison processes – fundamental to decision-making (e.g., attribute-based versus alternative-based) and to maximizing – will be helpful or not (Chowdhury, Ratneshwar, and Mohanty 2009; Huang and Zeelenberg 2012; Iyengar, Wells, and Schwartz 2006; Ma and Roese 2014; Schwartz et al. 2002).

Fourth, we identify waste aversion and decision-making strategy (deciding what to keep versus what to get rid of) as important boundary conditions of the phenomenon. While waste aversion has previously been examined in the context of purchase and disposal decisions (Bolton and Alba 2012; Jacoby, Berning, and Dietvorst 1977; Okada 2006), we find that waste aversion is especially likely to thwart downsizing when consumers downsize from an ordered (vs. disordered) set because it exacerbates the tendency to compare and thus retain items within a category. Fifth, 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 (i.e., rejection or exclusion from a consideration leads to larger consideration sets while selection or inclusion leads to smaller consideration sets) extends to downsizing and interacts with dis/order.

The current work begins the conversation of how downsizing decisions are made, with consequences not only for consumers and society, but also for marketers in relevant industries (such as home organization and storage).

ABSTRACT

The consequences of overconsumption and the recent popularity of simple living point to consumer interest in reducing belongings. They also raise an interesting question—what is a useful approach to downsizing and decluttering? We investigate how dis/order (messy vs. tidy items) affects downsizing and find, across nine focal studies, that a) consumers retain fewer items when choosing from a disordered set because b) order facilitates the comparisons within category that underlie the tendency to retain items. The impact of dis/order is altered by consumers' comparison tendencies, waste aversion, and decision strategy (selection vs. rejection), which serve as theoretically and pragmatically relevant moderators. Though consumers' lay beliefs favor rejecting from order (i.e., choosing what to get rid of from tidy items), our findings point to the usefulness of selecting from disorder (i.e., choosing what to keep from messy items) as a downsizing strategy. Together, this research has implications for consumer downsizing activities, the burgeoning home organization and storage industries, as well as sustainability.
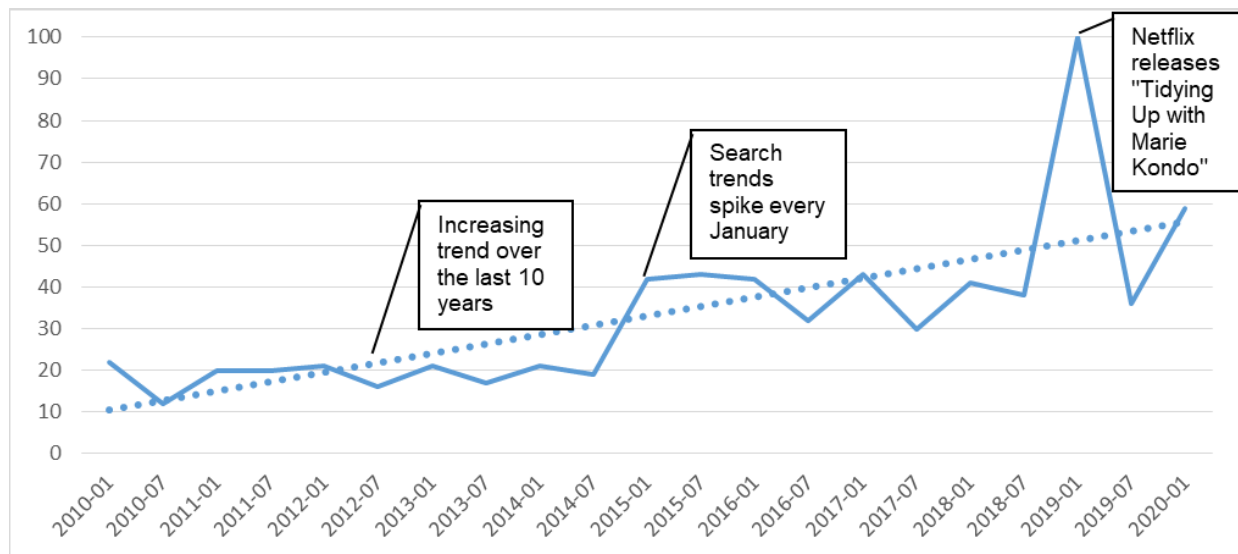
Keywords: downsizing, disorder, decision making, waste aversion, select-reject processes, maximizing

"Tidy by category, not by location." (Rule 4 of the KonMari Method; KonMari Media, 2020)
"We should be choosing what we want to keep, not what we want to get rid of." (Kondo 41)[1]

Downsizing is ubiquitous, from decluttering and downsizing relatively small spaces within the home (e.g., a bookcase, clothes closet, or food pantry), to downsizing the entire household, as might occur among those who are seeking to simplify their lives (e.g., empty nesters and aging baby boomers moving to smaller spaces (Williston Financial Group 2018); young people embracing the tiny house movement (Mullins 2010)). Indeed, consumer interest in downsizing is on the rise (see figure 1). Meanwhile, overconsumption has filled American homes to overflowing with an accumulation of goods, as witnessed by the $38 billion revenue in self-storage rentals (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 a useful approach to downsizing?

FIGURE 1: DECLUTTERING SEARCH 2010-2020

* Note: Using Google Trends, we performed a keyword search for "decluttering" in the USA. A similar search using the keyword "downsizing" returned results for a popular movie and employment changes. The index is a measure of relative search volume, with higher scores indicating greater search.

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[1] Like many consumers, we were inspired by Marie Kondo to declutter our homes – and also to conduct this research! Note that our work is not a test of the KonMari method per se but rather an investigation of ideas – on dis/order, waste aversion, and selection/rejection (as these quotes illustrate) – inspired by her writing and the surprising lack of research on 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) affects downsizing. We focus on the number of items retained and, across nine focal studies, find that a) consumers retain fewer items when choosing from a disordered set, because b) order facilitates the comparisons within category that underlie the tendency to retain items. The impact of dis/order is altered by consumers' comparison tendencies, waste aversion, and decision strategy (selection vs. rejection), which serve as theoretically and pragmatically relevant moderators. Whereas our findings point to the usefulness of a downsizing strategy of selecting from disorder (i.e., choosing what to keep from messy items), consumers' lay beliefs favor rejection and order (i.e., choosing what to get rid of from tidy items). That is, downsizing may be undermined if consumers follow their lay beliefs. Together, this research has implications for consumer downsizing, the burgeoning home organization and storage industries, as well as sustainability.

We make several contributions to the literature. First, we systematically 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 shed light on the underlying psychological process driving this counterintuitive finding: order facilitates the comparisons within category that drive the likelihood of retaining items (and hence undermines downsizing efforts). Thus, we add to our understanding of when making comparisons – fundamental to the information processing literature with respect to attribute-based versus alternative-based processing, and to maximizing tendencies – will be

helpful or not (Chowdhury, Ratneshwar, and Mohanty 2009; Huang and Zeelenberg 2012; Iyengar, Wells, and Schwartz 2006; Ma and Roese 2014; Schwartz et al. 2002).

Fourth, we identify waste aversion and decision-making strategy (i.e., selecting versus rejecting) as important boundary conditions on the phenomenon. While waste aversion has previously been examined in the context of purchase and disposal decisions (Bolton and Alba 2012; Jacoby, Berning, and Dietvorst 1977; Okada 2006), we find that waste aversion is especially likely to thwart downsizing when consumers downsize from an ordered (vs. disordered) set. Fifth, we extend the literature on selecting and rejecting 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. Namely, a strategy of rejection (i.e., exclusion) leads to more items left in a consideration set and in a set being downsized, but a strategy of selection (i.e., inclusion) is moderated by dis/order.

Finally, our research contributes substantively via its implications not only for consumers and society, but also for marketers in relevant industries (such as home organization and storage).

THEORETICAL DEVELOPMENT

Dis/Order

For the purposes of our research, dis/order refers to the extent to which items in a set are disorganized or organized (i.e., by category). For example, clothing items may be ordered in a closet (e.g., by jeans, t-shirts, etc.) or food may be ordered in a pantry (e.g., by soups, cereals, etc.). This distinction is frequently referred to colloquially as messy or tidy, although we acknowledge that the mapping is imperfect (e.g., while dis/order and messiness are correlated,

ordered items could be more or less tidy in terms of layout.) 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 Galinksy 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). In a retail setting, messiness leads to less favorable evaluations of a retailer (Doucé et al. 2014). Additionally, consumers receiving a gift from a friend expect less when the gift is wrapped messily (Rixom, Mas, and Rixom 2020). 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). In a choice context, disordered environments may also disrupt

habitual processes, promoting more extensive exploration of alternatives (Walter et al. 2020). When faced with large assortments, however, disorder may reduce perceptions of variety and decrease the amount chosen (Kahn and Wansink 2004).

To summarize: 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). However, disorder appears to affect processing in important ways, and we build upon this notion to propose that disorder will facilitate downsizing via its impact on comparison processes.

Comparison Processes

We theorize that disorder inhibits making comparisons within category because such comparisons are logistically challenging 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). Thus, 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 of the option (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). Because attribute-based processing involves comparisons within category, it leads to more decision conflicts and greater uncertainty (Dhar 1996). As such, attribute-based processing can shift decision makers into

strategies to make the choice easier and less final, such as compromise and choice deferral (i.e., keeping items in the set) (Dhar and Simonson 2003; Simonson 1989). In contrast, alternative-based processing eases the need to justify one's choices (Jang and Yoon 2016) and therefore attenuates the decision conflict that drives retention of items in the set.

Figure 2, panels A and B, illustrates these differences. An ordered environment increases attribute-based processing and corresponding comparisons with other items in the category; such comparisons lead to retention of items due to the conflict created by trying to decide what to retain. In contrast, a disordered environment leads to more alternative-based processing and inhibits within-category comparisons; such decisions require less justification, which in turn provide less of an impetus for retaining items in the set. As a result, we predict that consumers will retain fewer items when choosing from disorder (vs. order) because disorder inhibits the comparisons within category that drive retention of items. Formally:

H1: Consumers retain fewer items when downsizing from a disordered (vs. ordered) set of items.

H2: Disorder (order) inhibits (promotes) comparisons within category, leading to more alternative-based (attribute-based) processing, resulting in retention of fewer (more) items.

Given our theorizing in H1-H2, who will be most susceptible to the effects of dis/order? Prior research suggests that comparison tendencies vary among individuals (e.g., Cheek and Schwartz 2016; Iyengar et al. 2006; Schwartz et al. 2002). We exploit this individual variation in comparison tendency to provide further evidence for the role of comparisons via moderation of process (Spencer, Zanna, and Fong 2005). Specifically, among individuals high in comparison tendency, dis/order will affect the extent to which individuals make comparisons among alternatives within a category (following the logic discussed previously). Among individuals low

in comparison tendency, who do not typically make comparisons, the impact of dis/order should matter less. Accordingly, we hypothesize:

H2 (corollary): The impact of dis/order on downsizing in H1 will be more pronounced among consumers higher in the tendency to compare.

That is, comparison tendencies are a disadvantage (advantage) when downsizing from order (disorder). As will be discussed later, comparison tendencies are an important aspect of maximizing, and we use the subscale that focuses on comparison tendencies to test our H2 corollary (e.g., Chowdhury et al. 2009; Huang and Zeelenberg 2012; Iyengar et al. 2006; Ma and Roese 2014; Schwartz et al. 2002).

Downsizing Moderators

Thus far we have argued that disorder facilitates downsizing because it inhibits the comparisons within category that drive retention of items. We now examine two theoretically and pragmatically relevant moderators that are important in a downsizing context: waste aversion and decision strategy.

Waste Aversion. When contemplating downsizing, a classic idiom that comes to mind is "waste not, want not." Indeed, waste aversion can take many forms. For example, consumers are averse to squandering money and, as a result, may persist in an endeavor to ensure that prior investments do not go to waste (i.e., waste aversion as an explanation for the sunk-cost bias; Arkes 1996; Arkes and Blumer 1986). Consumers are also averse to wasting unused utility, especially when forward-thinking or when resources are scarce (Bolton and Alba 2012). Waste aversion affects consumer behavior in a variety of ways, from decisions about product replacement (e.g., getting one's money worth from past purchases; Cripps and Meyer 1994) to food purchase decisions (e.g., the impact of expiration dates; e.g., Tsiros and Heilman 2005). Of

particular relevance to the present work is research on how waste aversion impacts disposal decisions. For example, negative emotions associated with waste are induced by product disposal into a landfill and mitigated by recycling efforts (Sun and Trudel 2017), especially when the tangible form of the product to be disposed of is intact (cueing unused utility) or when the product is linked to one's identity (Trudel and Argo 2013; Trudel, Argo, and Meng 2015, 2016). Hence, downsizing creates a 'perfect storm' when it comes to waste aversion: disposing of belongings represents squandered money and unused utility.

Given this backdrop, we propose that waste aversion will accentuate the impact of dis/order on downsizing. Why? Waste aversion is a forward-looking phenomenon (Bolton and Alba 2012) that has been linked to consideration of future consequences (Strathman et al.1994). Hence, consumers who are highly waste averse are more likely to consider downsizing decisions carefully to minimize the losses and waste associated with disposal. Thus, when items are ordered (versus disordered), consumers high in waste aversion are likely to make more comparisons within category (relative to those low in waste aversion) out of a desire to avoid waste. This will increase decision conflict (Dhar 1996; Luce, Bettman and Payne 1997;; Sanbonmatsu and Fazio 1990), which is resolved in favor of retaining items. Doing so mitigates the negative affect that may arise from concerns over squandered money and unused utility (e.g., Arkes 1996, Bolton and Alba 2012). That is, waste aversion accentuates the impact of dis/order on downsizing by dialing up both the tendency to make comparisons within category *and* the tendency to resolve decisional conflict by retaining items. Accordingly:

> **H3:** The impact of dis/order on downsizing in H1 will be more pronounced when consumers are waste averse.

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 including), 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).

Within a downsizing context, we argue that dis/order effects are more likely to emerge under a selection versus rejection strategy. Our reasoning is two-fold and captured in figure 2 using the concrete example of downsizing clothing. First, rejection is more final and hence the criteria for removing an item from the set is higher; the default tendency is to retain items in the choice set. As a result, consumers are expected to default to retain items under a rejection strategy and will be relatively unaffected by dis/order. (For example, whether evaluating a single pair of jeans or comparing two pairs of jeans, the default under rejection will be to retain items because rejection is so final.) Second, and in contrast to rejection, selection is more focused on

providing a reason or justification for inclusion in the set (i.e., what you want to keep). Order (vs.

disorder) facilitates comparisons within category to provide this justification, but the resulting

comparisons create conflict for the decision-maker and thereby provide the impetus to retain

items in the set as a means of resolving what to keep. We therefore predict an interaction

between dis/order and select/reject decision strategy such that:

> **H4:** The impact of dis/order on downsizing in H1 will be more pronounced when
> consumers engage in a selection (vs. rejection) strategy.

FIGURE 2: GRAPHIC REPRESENTATION OF SELECTING/REJECTING FROM DIS/ORDER

A: Selecting from Order	B: Selecting from Disorder
"Which jeans should I keep? It's hard to decide, I think I better keep both." 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.	*"Should I keep these jeans? Nah, they're not so great."* 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.
C: Rejecting from Order	D: Rejecting from Disorder
"Which jeans should I get rid of? Getting rid of things is so final. I think I better keep both."	*"Should I get rid of these jeans? Getting rid of things is so final. I think I better keep them."*
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.	

Empirical Overview

We test our theorizing in a series of nine focal studies. (Seven additional studies are reported in the web appendix which support our theorizing; see figure 3 for an organizing framework.) Two pilot studies (Pilots A and B) examine real-world evidence that disorder is associated with greater downsizing. We also discuss lay and expert beliefs about downsizing, which support other seemingly sensible strategies that run contrary to our findings. Studies 1A and 1B provide causal evidence in real downsizing contexts that disorder facilitates downsizing (testing H1). Studies 2A-3 investigate the underlying psychological mechanism (that disorder inhibits the comparisons within category that underlie the tendency to retain items; testing H2-H3): through measured mediation (S2A), moderation of process (S2B), and interruption of process (S3). Finally, studies 4 and 5 investigate theoretically and pragmatically relevant moderators – waste aversion and selection/rejection strategies (testing H3-H4) – while also providing additional evidence for how downsizing is accomplished (i.e., within or across category). Downsizing can occur in a variety of domains, and we sought evidence for dis/order effects in downsizing across a variety of contexts – ranging from household goods, to clothing, to food – with variation in both sample (undergraduate students, Amazon Mechanical Turk workers, adult householders) and setting (laboratory, field). (See web appendix for a summary of our studies.) Together, these findings attest to robust effects of dis/order on downsizing, with interesting theoretical and pragmatic implications.

FIGURE 3: CONCEPTUAL FRAMEWORK

PILOTS A-B: MEASURED DIS/ORDER AND DOWNSIZING IN THE FIELD

Two pilot studies examine actual downsizing in the home (Pilot A) and during a residential move (Pilot B). Consistent with H1, we expect that disorder facilitates downsizing.

Pilot A: Home Downsizing

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. We stated that the study was intended for those that had been in a situation that required reduction of total number of belongings such as moving to a smaller house/apartment.

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/ items they had 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). (We relied upon this more

conservative coding approach rather than self-report of disorder to minimize response bias in the data.)

As the focal dependent variable, participants were asked to indicate the percentage of items they retained using a slider scale (0-100%). As background information, participants also indicated whether they felt they needed to organize their items before they started downsizing (1 = definitely not, 7 = definitely yes), how often they tend to sort through their belongings (1 = never, 5 = once a month), and demographics. (In this and all subsequent studies, see section 6 of the web appendix for complete stimuli.)

Results. 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.) An ANOVA revealed a main effect of dis/order: 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.

To add to the richness of these results, we examined the open-ended responses and found that the main reasons reported for downsizing were moving (48%) and excess items/needing to create more space (48%). A variety of items were downsized including the entire household (41%), and specific categories like clothing (21%) and books (9%). Frequency of downsizing was non-trivial ($M = 3.40$, SD = .89; $t(124) = 5.03$, $p < .001$ in non-neutral t-test), most frequently once every few months (42%) and once a year (32%). Of particular interest, participants also reported feeling they needed to organize their items before downsizing,

especially when they started with disorder ($M_{disorder}$ = 4.89 vs. M_{order} = 3.85; $F(1, 123)$ = 7.37, p = .008, partial η^2 = .06). That is, consumers downsize with some frequency, and their lay beliefs about dis/order seemingly run contrary to our hypotheses (and results).[2]

Pilot B: Residential Move

Method. Undergraduate students at a large university (n = 213; 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.[3,4] The focal dependent variable was items retained: participants were asked to indicate what proportion of their total <u>personal</u> belongings they had kept from their room when packing up (0-100%). As a measure of dis/order, participants indicated how messy or tidy their room was before packing (1 = messy, 7 = tidy). To rule out an alternative explanation when disorder is measured (i.e., that disordered environments contain more trash), participants also indicated the percentage of items they left behind that was trash. Finally, participants provided background information (e.g., demographics).

Results. 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, *dis*order is associated with greater downsizing. Note that disorder did not co-vary with the amount of trash (b = -.06, $t(193)$

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[2] To follow up on the idea that consumers seem to favor order when downsizing, we explored lay and expert beliefs about downsizing in three additional studies (see web appendix section 4). Consumer lay beliefs support the seemingly sensible strategy of rejecting-from-order (i.e., choosing what to get rid of from tidy items) rather than selecting-from-disorder (i.e., choosing what to keep from messy items). Interestingly, professional organizers (as experts) supported rejecting-from-disorder, perhaps because they typically deal with clientele with highly disordered (rather than ordered) belongings. Neither group favored selecting from disorder – in sharp contrast to our hypotheses and downsizing evidence.

[3] Three participants were eliminated for not properly following instructions.

[4] The dorm rooms the students were moving out of were a consistent size and all contained the same university-provided furniture (i.e., bed, dresser, chair, desk, refrigerator, etc.). Personalizing dorm rooms is an important aspect of the college experience for many students (e.g., Corsillo 2019). On average, participants in the study retained 87.20% (SD = 11.94%) of their belongings, consistent with an attachment to their belongings.

= -.78, p = .44), thereby ruling out trash as an alternative explanation when disorder is measured. This result supports H1: disorder facilitates downsizing.

Discussion

Together, the pilots support H1: consumers retain fewer items when downsizing from a disordered (vs. ordered) set of items. Given this correlational evidence for dis/order effects in real downsizing, we turn to controlled experiments with real behavior in subsequent studies.

STUDY 1: MANIPULATED DIS/ORDER AND CONSEQUENTIAL DOWNSIZING

The objective of study 1 is to provide stronger causal evidence of the impact of dis/order in a consequential downsizing task. Study 1A examines downsizing in a controlled lab setting using candy; study 1B examines downsizing of clothing items in the home. Consistent with H1, we predict that disorder will lead to greater downsizing (because order facilitates the comparisons within category that drive retention of items).

Study 1A: Manipulated Dis/Order in the Lab

Method. Undergraduate students at a large university (n = 101; 58% female; median age = 19) participated in a two-group (dis/order) between-subjects design in exchange for extra credit in an introductory business class.

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, consistent with the cover story.) The amount and type of candy was held constant across each

condition. Dis/order was manipulated by placing the candy in a box in either ordered or disordered fashion (i.e., organized by flavor or not). To prevent participants from inadvertently seeing other participants' manipulations, the study utilized privacy dividers between workstations and 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[5]. (A research assistant determined the number of candies in the snack bag afterwards.) After downsizing, participants responded to a manipulation check that asked them to rate disorder ("how organized did the candies feel?" 1 = completely disorganized, 7 = completely organized). Participants also provided background information (e.g., demographics). At the end of the session, participants took the candy away with them.

Results. Participants 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 η^2 = .65), supporting the manipulation. An ANOVA on number of 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 η^2 = .04). This result supports H1: disorder facilitates downsizing.

Study 1B: Manipulated Dis/Order in the Home

Method. Undergraduate students (n = 140; 49% female; median age = 19), along with one family member (75% female; median age = 46), participated in a two-group (dis/order) between-

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[5] Across studies, dis/order effects were robust to providing an explicit downsizing target/range or not.

subjects design study in exchange for a payment of $10 (to go to the family member) and extra

credit in an introductory business class (for the student).[6]

Students on spring break were given step-by-step instructions to guide and observe a

family member as they downsized clothing items. First, the family member (i.e., the focal

participant) selected a space (e.g., closet, dresser) where there were clothing items they wanted to

downsize. The student took and uploaded a photo of the selected area before the family member

began any downsizing and rated the space on how messy or tidy it appeared (1 = messy, 7 = tidy)

for use as a potential covariate. Second, dis/order was manipulated by instructing the family

member to remove items from the area and place them on a surface either in a messy pile ("do

not organize the items in any way") or in a tidy pile ("organize the items (e.g., put all jeans

together, all sweaters together"). (Order is again expected to facilitate the comparisons within

category that drive retention of items. Manipulating order in this way also helps rule out potential

correlates of measured disorder such as attachment, quality, value, and so on, because dis/order

was randomly assigned to items, regardless of their initial state.) The student again took and

uploaded a photo and rated the dis/order of the items (same item as above) for use as a

manipulation check. Third, the family member was instructed to select the items they wanted to

keep. After the downsizing was complete, the student again took and uploaded a photo of the

discarded items and the student and family member provided background information. The

family member was then asked to indicate the percentage of original clothing items kept (the

focal dependent variable) and other background measures.

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[6] To ensure downsizing was actually carried out, the student was asked to upload three photos of the family member's downsizing progress: thirty participants were eliminated who failed to do so. We also screened out sixteen non-English speakers.

Results. Student participants rated their family member's items as more ordered when items were placed on the surface in an ordered versus disordered manner (M_{order} = 4.74 vs. $M_{disorder}$ = 3.51; $F(1, 138) = 18.37$, $p < .001$, partial $\eta^2 = .12$), supporting the manipulation. Initial ratings of dis/order also differed by condition (M_{order} = 3.81 vs. $M_{disorder}$ = 3.31; $F(1, 138) = 4.08$, $p = .05$, partial $\eta^2 = .03$); this variable was used as a covariate in subsequent analyses.

Turning to the focal dependent variable, family members retained more items in the ordered versus disordered condition (M_{order} = 65.91% vs. $M_{disorder}$= 60.44%, $F(1, 137) = 3.87$, $p = .05$, partial $\eta^2 = .03$). The initial dis/order covariate was NS, unsurprisingly given the subsequent manipulation of dis/order ($F(1, 137) = .61$, $p = .44$). (Without this covariate, the effect of dis/order is marginal; $F(1, 138) = 3.48$, $p = .06$, partial $\eta^2 = .03$.) These results support H1.

To bolster our findings, a research assistant blind to hypotheses reviewed the pictures that were uploaded to assess percentage kept (by comparing the first and second photo against the final photo)[7]. As expected, this independent assessment was correlated with the percent kept reported by the family member ($r = .25$, $p = .005$). This supports the veridicality of the self-report data. In addition, using the coder's assessment as the focal dependent variable, downsizers retained a larger percentage of items in the ordered versus disordered condition (M_{order} = .53 vs. $M_{disorder}$ = .41; $F(1, 129) = 8.02$, $p = .005$, partial $\eta^2 = .06$). (Averaging the two measures (i.e., coder and participant) is likewise supportive: M_{order} = 59.40 vs. $M_{disorder}$ = 50.43; $F(1, 129) = 8.83$, $p = .004$, partial $\eta^2 = .06$.) This result supports H1.

Discussion

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[7] The research assistant was unable to provide ratings for nine pictures.

Together, studies 1A and 1B support H1: disorder facilitates downsizing. We observe these results in consequential downsizing in the laboratory (where the same items were dis/ordered) and in the home (where dis/order was manipulated via downsizing instructions). Further, the studies help rule out alternative explanations based on potential correlates of dis/order (e.g., trash) and, given random assignment to dis/order condition, we can infer that differences in item quality and item attachment are not driving the observed effect of dis/order on downsizing. Based on the evidence for dis/order effects on downsizing in pilots A-B and studies 1A-1B, we now turn to an investigation of the underlying process.

STUDY 2: PSYCHOLOGICAL PROCESS

Studies 2A-2B investigate the underlying psychological process that accounts for dis/order effects in downsizing. Our theorizing in H1-H2 proposes that disorder inhibits the comparison processes that underlie the tendency to retain items, thereby facilitating downsizing. We further theorize in the H2 corollary that the impact of dis/order will be greater among consumers with a heightened tendency to make comparisons. Study 2A tests H1-H2 in a hypothetical downsizing task involving clothing; Study 2B tests the H2 corollary by examining individual differences in comparison tendency as a moderator. That is, study 2A provides evidence for the focal process (comparisons) via measured mediation; study 2B utilizes moderation of process.

Study 2A: Mediation via Comparisons

Method. Undergraduate students at a large university (n = 123; 43% female; median age = 19) participated in a two-group (dis/order) between-subjects design for extra credit in an introductory business class.

Participants imagined they were studying abroad and could only keep about half of their current clothing. To manipulate dis/order, participants saw a picture of either ordered or disordered clothing and either an ordered or disordered list of fifty clothing items. (Clothing items were from a variety of categories, including jeans/pants, shirts/blouses, sweaters, sweatshirts, long sleeve shirts, t-shirts, shoes, jackets, and athletic wear. Items were listed on the left side of the screen, either in random order or ordered by category (e.g., all jeans/pants, then all shirts/blouses, etc.). Participants indicated what they wanted to keep by dragging each clothing item into a box on the right side of the screen.

After completing the downsizing task, participants responded to various potential process measures. Participants were first asked to estimate the value of the set of items they decided to keep, as well as the set of items they decided to get rid of, each on a slider scale ($0-$1,000). Participants then responded to a measure capturing the extent of comparison processes when downsizing. Specifically, participants read definitions of alternative- and attribute-based processing (Payne, Bettman, and Johnson 1993): "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), where higher numbers indicated a greater extent of comparisons.

To explore potential alternative mechanisms, participants also assessed the final set in terms of quality (1 = low quality, 7 = high quality; 1 = poor quality, 7 = excellent quality; r = .88), quantity (1 = low quantity, 7 = high quantity; 1 = very few, 7 = very many; r = .92), and necessity (1 = not at all necessary, 7 = necessary; 1 = unneeded, 7 = needed; r = .83). Participants also indicated the extent to which the sorting task induced negative feelings (e.g., stressful, anxiety-inducing) (1 = not at all, 7 = extremely), positive feelings (e.g., happy, hopeful) (1 = not at all, 7 = extremely), and to what extent they focused on how it feels good / bad to get rid of things (1 = not at all, 7 = very much) (see web appendix section 2 for full measures). 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), as well as other background measures (e.g., demographics).

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 η^2 = .55), supporting the manipulation. An ANOVA of the number of items retained revealed a main effect of dis/order (M_{order} = 24.08 vs. $M_{disorder}$ = 18.54; $F(1, 121)$ = 21.38, $p < .001$, partial η^2 = .15). Participants retained fewer items when items were disordered versus ordered – supporting H1 and replicating the findings of studies 1A-1B.

To assess the proposed process in H2, we examined the extent to which participants were engaged in comparisons (as assessed via attribute-based versus alternative-based processing). An ANOVA revealed a main effect of dis/order (M_{order} = 4.37 vs. $M_{disorder}$ = 3.69; $F(1, 121)$ = 4.59, p = .03, partial η^2 = .04) such that attribute-based processing ("looking at items within the same category and comparing items side by side" rather than "in isolation") was more prominent in the ordered versus disordered condition. A bootstrapping analysis was then conducted to assess

mediation, with dis/order as the independent variable, extent of comparisons as the mediator, and final items retained as the dependent variable. The analysis supports an indirect effect via comparisons (PROCESS model 4, axb = -0.49, SE = 0.33, 90% CI = [-1.08, -.03]), supporting H2. That is, disorder inhibits the comparison-based processes that drive retention of items.

Regarding alternative accounts. We find that dis/order had no effect on estimates of value. Specifically, value of items retained did not differ by condition (M_{order} = 675.68 vs. $M_{disorder}$ = 630.07, $F(1, 121)$ = 1.25, p = .27, partial η^2 = .01), nor did value of items discarded (M_{order} = 546.15 vs. $M_{disorder}$ = 529.46, $F(1, 121)$ = .18, p = .68, partial η^2 = .001). Mediation continues to support comparison processes if the value variables are included as parallel mediators (comparison: axb = -.43, SE = .30, 90% CI = [-.98, -.03]; keep value axb = -.42, SE = .42, 90% CI = [-1.18, .19]; get rid of value axb = .18, SE = .44, 90% CI = [-.53, .89]).

Dis/order did affect perceptions of quality (M_{order} = 5.85 vs. $M_{disorder}$ = 5.33, $F(1, 120)$ = 6.16, p = .01, partial η^2 = .05), but had no effect on perceptions of quantity or necessity (M_{order} = 4.72 vs. $M_{disorder}$ = 4.38, $F(1, 120)$ = 2.11, p = .15, partial η^2 = .02 and M_{order} = 5.65 vs. $M_{disorder}$ = 5.60, $F(1, 120)$ = .05, p = .82, partial η^2 = .00, respectively). Mediation again continues to support comparison processes if these variables are included as parallel mediators (comparison: axb = -.46, SE = .34, 90% CI = [-1.09, -.002]; all other CIs contain zero). And lastly, the feelings measures yielded four factors (see web appendix section 2 for full details): positive feelings (α = .91), negative feelings (α = .86), stress (α = .75), and feels good to get rid of things. An ANOVA on these potential process measures yielded non-significant effects of dis/order (all p's > .10). In addition, mediation analysis with these process measures included in parallel with comparison processes supported comparisons as the only significant mediator (comparison: axb = -.45, SE = .32, 90% CI = [-1.03, -.003]; all other CIs contain zero). Together, these results help rule out

potential alternative accounts (e.g., that dis/order affects valuations, quality, quantity perceptions, or felt affect).

Study 2B: Moderation of Process

Method. Amazon Mechanical Turk workers (n = 202; 46% female; median age = 34) participated in a two-group (dis/order) between-subjects design, with comparison tendency as a measured covariate, for a small payment.

In an initial task, we assessed comparison tendency by asking participants to respond to the following set of items, each on seven-point disagree/agree scales: "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.)." These items were drawn from the 13-item Maximization Scale (Schwartz et al. 2002); we included the other items from this scale for completeness, along with several filler scales (see web appendix section 2 for details).

In an ostensibly unrelated task, participants were then asked to imagine they were moving to a new home the following month with a smaller closet and needed to downsize their clothing. Dis/order was manipulated as in study 2A (picture and list). 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). Participants also provided background information.

Results. Participants 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 η^2 = .49), supporting the manipulation. An ANOVA of the final number of 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 η^2 = .10). Replicating the previous studies, participants retained fewer items when selecting from a disordered versus ordered set of items.

An ANCOVA incorporating comparison tendency revealed the expected two-way interaction of dis/order and comparison tendency ($t(198)$ = -1.68, $p = .09$) as well as a main effect for comparison tendency ($t(198)$ = -3.26, $p = .001$); the main effect for dis/order was NS ($t(198)$ = .20, $p = .84$). A floodlight analysis revealed an effect of dis/order that emerged above 2.70 on the comparison tendency scale ($t(198)$ = -1.97, $p = .05$). Consumers low in comparison tendency are relatively unaffected by dis/order; consumers high in comparison tendency retain fewer items when downsizing from a disordered (vs. ordered) set of items.[8]

Discussion

Studies 2A and 2B shed light on the underlying psychological mechanism. Specifically, study 2A shows that disorder reduces the extent to which individuals make comparisons that drive the retention of items, and study 2B demonstrates that the effect of dis/order is moderated

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[8] For completeness: A factor analysis supports the expected three-factor structure for the maximizing scale, with items reflecting *comparisons* (or *alternative search;* α = .79), *high standards* (e.g., "I never settle for second best"; α = .77), and *decision difficulty* (e.g., "I often find it difficult to shop for a gift for a friend"; α = .81). The analysis in the text is based on the comparison factor; a similar ANCOVA using the decision difficulty factor reveals a marginal interaction with dis/order ($b = -.72$, $t(198)$ = -1.90, $p = .06$) and with the high standards factor reveals a non-significant interaction ($b = -.29$, $t(198)$ = -.60, $p = .55$).

by consumers' tendency to compare. That is, disorder makes it more challenging in practice to make comparisons among items in a category, which is beneficial when downsizing because these comparisons lead to more decision conflict and greater retention of items.

STUDY 3: MAKING COMPARISONS

The purpose of study 3 is to provide further evidence for our theorizing in H1—H2. Recall that in study 2A, consumers reported engaging in more alternative-based processing when downsizing from disorder. That is, they evaluated items one at a time, in the sequence in which they encountered them – and disorder undermined comparisons within category and facilitated downsizing. One at a time processing, however, may still lead to comparisons within category if the items presented sequentially are ordered – an idea that we leverage in study 3 by investigating downsizing when the options are presented one at a time, sequentially. Specifically, we expect dis/order effects to emerge due to the heightened salience of other items within the category. That is, memory for items within the category should be higher when the items are presented in an ordered (by category) sequence, which should in turn facilitate the comparisons that drive retention of items. A sequential downsizing task may be viewed as a strong test of our theorizing as all participants must consider items one-at-a-time and only memory for previously seen options allows comparisons.

Method

Undergraduate students at a large university in the U.S. (n = 160; 46% female; median age = 19) participated in a two-group (dis/order) between-subjects study in exchange for extra credit in an introductory business class.

Participants were asked to engage in a downsizing task in which they owned a lot of gift cards and wanted to reduce the number by around half. Each gift card was worth $25. Any gift cards not kept would be sold on a gift card exchange[9] or given away. There were 31 unique gift cards for brands such as Olive Garden, Lowe's, Kohl's, and T.J. Maxx.

Participants were run one-at-a-time in a private room and presented with actual gift cards as follows: A research assistant blind to hypotheses showed a stack of gift cards to the participants and told them these were their gift cards. The research assistant explained that they would display each gift card sequentially (participants did not touch the cards in order to maintain the sequential nature of the task); the participant was asked to indicate whether they wanted to keep the card. To manipulate dis/order, the gift cards were presented sequentially in either a disordered or ordered manner by category. We anticipated that presenting the gift cards in an ordered manner by category (e.g., all of the sports/outdoor store gift cards, then all of the restaurant gift cards), despite being sequential, would facilitate making comparisons and thus lead to the retention of more gift cards.

After making their selections, participants answered various background questions, including a manipulation check for disorder ("how disorganized or organized did the gift cards appear?" 1 = disorganized/messy, 7 = organized/tidy). The research assistant privately recorded the number of cards that were retained as the focal dependent variable.

Results

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[9] Gift card exchanges are increasing in popularity, with many websites and articles discussing how to buy and sell used gift cards. Since 2008, there has been over $21 billion in unused gift cards which leaves a large market for exchanges of these types (Kiernan 2016).

As expected, participants rated the gift cards as more ordered in the corresponding condition (M_{order} = 5.15 vs. $M_{disorder}$ = 4.35; $F(1, 156)$ = 8.48, p = .004, partial η^2 = .05), supporting the manipulation. Participants retained fewer gift cards when the cards were disordered rather than ordered ($M_{disorder}$ = 13.24 vs. M_{order} = 14.15; $F(1, 158)$ = 3.95, p = .05, partial η^2 = .02), supporting H1.

A companion study (see web appendix section 2 for full method and results) was conducted to provide evidence for the underlying process (H2). The hypothetical downsizing task was similar to the real gift card task except that participants were interrupted midway through and asked to what extent they were engaging in alternative versus attribute processing. (We utilized an interruption approach to capture process measures while downsizing was underway: doing so ensures that 'in process' measures do not contaminate subsequent downsizing behavior and also avoids reliance on retrospective recall (Carlson et al. 2014).) As expected, attribute-based processing was more prominent in the ordered versus disordered condition (M_{order} = 3.27 vs. $M_{disorder}$ = 2.67; $F(1, 139)$ = 3.50, p = .06, partial η^2 = .03) and participants recalled more items within-category when they were ordered (M_{order} = 2.88 vs. $M_{disorder}$ = 2.53; $F(1, 139)$ = 4.65, p = .03, partial η^2 = .03). These results support our theorizing and H2: when items are ordered, participants engage in more within-category comparison processes during the downsizing task.

Discussion

Study 3 provides further evidence for our theorizing in a sequential downsizing task. Not only does this replicate our effect in a new domain, we observe this evidence in an arguably

conservative test: dis/order effects emerge even when processing is sequential due to the salience of similar items that inhibit/facilitate comparison processes.

Given this robust evidence that disorder facilitates downsizing by inhibiting the comparisons that underlie the tendency to retain, we now turn our investigation to theoretically and pragmatically relevant moderators: specifically, waste aversion (study 4) and selection/rejection decision strategies (study 5).

STUDY 4: WASTE AVERSION AS A MODERATOR

The purpose of study 4 is two-fold. First, we investigate a moderator to the effect of dis/order: waste aversion. We predict that not only will participants in the order condition retain more items, but that the effect of order will be accentuated for those high in waste aversion by dialing up both the tendency to make comparisons within category and the tendency to resolve decisional conflict by retaining items. Second, study 4 also examines how downsizing is accomplished – whether through eliminating entire categories (as in a budget contraction; Carlson et al. 2015) or by reducing the number of items within a category. Although either may occur, the latter would provide further support for our theorizing that disorder inhibits the comparisons within category that tend to drive retention of items.

Method

Undergraduate students at a large university (n = 184; 47% female; median age = 19) participated in a two-group (dis/order) between-subjects design for extra credit and a prize drawing in an introductory business class. To minimize cultural differences in food preferences, only participants who mainly speak English at home were qualified to participate.

Participants were asked to engage in a downsizing task where they faced an over-crowded food pantry and wanted to reduce the number of items by around half. The downsizing task was consequential: participants were told at the beginning of the study that we would hold a drawing and winners would receive a set of food items based on their actual selections. Two identical doored cubicles in the lab were set up and participants were presented with actual food items that consisted of a variety of brands/flavors in several categories (e.g., soup, cereal, crackers, chips). All food items were initially displayed in disorder (i.e., not organized by category; see web appendix for a complete list of food items). In the order condition only, participants were asked to "organize the food items into different categories or groups."[10] Finally, all participants were then instructed to "select the food items you would like to keep" and to "place them on the table next you."

Following the downsizing task, participants reported the number of food items they selected in total and by category, and also estimated the value of items retained (on a $0 to $1000 slider scale)[11]. To assess how downsizing was done (i.e., across or within categories), we calculated the number of categories retained (out of 7) and the average proportion retained within category. (For example, if participants selected 2 out of 7 canned soups, the proportion was calculated as 0.29, and we then averaged across retained categories.)

After responding to various potential measures of process (see web appendix section 2), participants indicated their general aversion to waste (in the form of product, food, and money waste: "It bothers me to see things go to waste", "I consider wasting food to be sinful", "I hate to

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[10] As in study 1B, both the dis/order conditions had the same starting point (with a disordered set of options). Those in the order condition were invited to arrange the options into categories. Doing so helps rule out alternative explanations based on the initial appearance of items by holding it constant.

[11] As in study 2A, perceptions of value were unaffected by dis/order (M_{order} = 64.45 vs. $M_{disorder}$ = 60.33; $F(1, 181)$ = 1.11, p = .36) – suggesting that value perceptions do not underlie dis/order differences in retention.

waste money"; α = .56). Finally, participants responded to background questions. Afterwards, a random drawing was held, and four winners received the food items they had selected.

Results

An ANOVA of items retained showed a main effect of dis/order (M_{order} = 18.25 vs. $M_{disorder}$ = 16.57; $F(1,182) = 3.61$, $p = .03$; partial $\eta^2 = .02$). Consistent with H1, participants retained more when they had ordered items before downsizing versus leaving items disordered.

Incorporating waste aversion into the analysis, an ANCOVA of items retained revealed main effects of disorder ($t(180) = 2.00$, $p = .05$) and waste aversion ($t(180) = 2.28$, $p = .02$), qualified by their interaction ($t(180) = -2.40$, $p = .02$). A floodlight analysis revealed that disorder (vs. order) reduced the number of items retained when measured waste aversion was above 3.77 ($t(180) = -1.97$, $p = .05$). (Looked at another way, the simple effect of waste aversion was positive when items were ordered ($b = 2.72$, $t(180) = 3.10$, $p = .002$), but not when items were disordered ($b = -.07$, $t(180) = -.09$, $p = .93$.) Overall, consumers low in waste aversion are relatively unaffected by dis/order; consumers high in waste aversion retain fewer items under disorder than order.

We also examined the impact of dis/order on how downsizing is carried out (i.e., across or within categories). First, we looked at the number of categories retained: ANCOVA revealed a main effect of waste aversion ($b = .21$, $t(180) = 2.15$, $p = .03$); the effect of disorder and the interaction were NS (respectively, $t(180) = .33$, $p = 74$; $t(180) = -.52$, $p = .60$). Unsurprisingly, consumers retain more categories when waste aversion is higher. Second, we examined the average proportion of items within each category retained. ANCOVA revealed a main effect of disorder ($b = .12$, $t(180) = 2.62$, $p = .01$), qualified by its interaction with waste aversion ($b = -$

.03, $t(180) = -2.93$, $p = .004$); the main effect of waste aversion was NS ($b = .008$, $t(180) = .67$, $p = .50$). A floodlight analysis revealed that disorder (vs. order) reduced the proportion of items retained within category above 3.91 on the waste aversion measure. (Looked at another way, the simple effect of waste aversion was positive when items were ordered ($b = .04$, $t(180) = 2.38$, $p = .02$) but not when items were disordered ($b = -.03$, $t(180) = -1.72$, $p = .09$). This result aligns with our theorizing: order facilitates comparisons with other items in the category, leading to a greater proportion of items retained within category, especially when consumers are waste averse. Third, as expected, a moderated mediation analysis (see web appendix section 2 for details) supports the idea that differences arise due to changes in the retention of items within category.

Discussion

Study 4 finds that waste aversion moderates the impact of dis/order on downsizing. In an incentive-aligned downsizing task, dis/order effects are accentuated when consumers are waste averse. Moreover, downsizing differences are driven primarily by differences in the retention of items within category (rather than the number of categories retained). These findings are consistent with our theorizing that order facilitates the comparisons within category that underlie retention of items, especially when consumers are waste averse.

STUDY 5: SELECTION/REJECTION FROM DIS/ORDER

The purpose of study 5 is two-fold. First, we investigate the impact of decision strategy on dis/order effects in downsizing. Per H4, we predict that consumers will retain fewer items when downsizing from a disordered (vs. ordered) set, especially under a selection rather than

rejection strategy (because rejection is more final and the default tendency is to retain items).

Second, we provide additional evidence of how downsizing is accomplished – whether through

eliminating entire categories or by reducing the number of items within a category. Although

either may occur, the latter would provide further support for our theorizing that disorder inhibits

the comparisons within category that tend to drive retention of items (as observed in study 4).

Method

Undergraduate students at a large university (n = 222; 46% female; median age = 19)

participated in a 2 (dis/order) x 2 (select/reject) between-subjects design for extra credit in an

introductory business course.

Participants imagined they had taken a trip to the beach over the summer and purchased a

large amount of saltwater taffy and now sought to reduce the number of pieces to fit into a snack

bag (same cover story as in study 1A). Dis/order was manipulated with a picture and list (like

study 2A with clothing). To manipulate decision strategy (select/reject), participants used a drag

and drop menu to *select* the items they wanted or *reject* the items they did not want. Participants

were told they could keep 25 or fewer candies. The focal dependent variable was the number of

items retained. To assess how downsizing was accomplished, we also calculated the number of

categories retained (out of 9), and the average proportion within retained categories.

After downsizing, participants responded to manipulation checks for selection/rejection

("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) and disorder ("how organized did the candies feel?" 1 = completely

disorganized, 7 = completely organized), as well as background information.

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 η^2 = .18). Participants also rated the items as more organized in the order versus disorder condition (M_{order} = 5.70 vs. $M_{disorder}$ = 2.19; $F(1, 182)$ = 266.58, $p < .001$, partial η^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 η^2 = .10) and strategy ($F(1, 218)$ = 105.92, $p < .001$, partial η^2 = .33), qualified by the expected two-way interaction ($F(1, 218)$ = 34.65, $p < .001$, partial η^2 = .14) (see figure 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 η^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 η^2 = .21), replicating the real-behavior result of study 1A. Looked at another way, rejection led to keeping more items than selection, a difference magnified under disorder (M_{reject} = 23.18 vs. M_{select} = 10.04 ($F(1, 218)$ = 132.06, $p < .001$, partial η^2 = .38) more than order (M_{reject} = 22.36 vs. M_{select} = 18.78) ($F(1, 218)$ = 9.61, $p = .002$, partial η^2 = .04). Overall, this pattern supports H5.

FIGURE 4: DOWNSIZING AS A FUNCTION OF DIS/ORDER AND SELECTION/REJECTION

As in study 4, we also examined the impact of dis/order on how downsizing was carried out. First, we examined the number of categories retained (out of 9). An ANOVA revealed a marginal effect of disorder ($M_{disorder}$ = 5.56 vs. M_{order} = 5.99; $F(1, 218) = 2.78$, $p = .10$, partial η^2 = .01) and a main effect of 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 marginally more categories when items were ordered and when consumers used a rejection strategy. Second, we examined the average proportion of items within each category retained, which revealed main effects of dis/order ($F(1, 218) = 15.35$, $p < .001$, partial $\eta^2 = .07$) and selection/rejection ($F(1, 218) = 52.76$, $p < .001$, partial $\eta^2 = .20$), qualified by their interaction ($F(1, 218) = 26.68$, $p < .001$, partial $\eta^2 = .11$). Under rejection, dis/order had no effect ($M_{disorder}$ = .71 vs. M_{order} = .68; $F(1, 218) = .78$, $p = .38$, partial $\eta^2 = .004$); under selection, a lower proportion of items were retained in the disordered versus ordered condition ($M_{disorder}$ = .36 vs. M_{order} = .62; $F(1, 218) = 41.23$, $p < .001$, partial $\eta^2 = .16$). This result aligns with our theorizing: because disorder inhibits the comparisons within category that drive retention of items under a selection (but not rejection) strategy, we observe a greater proportion of items retained within category when participants select from an ordered set of items. Third, as

expected, a moderated mediation analysis (see web appendix section 2 for details) supports the idea that differences arise due to changes in the retention of items within category.

Discussion

Study 5 demonstrates that disorder facilitates downsizing, especially under a selection strategy. Two additional replications were conducted in the domains of clothing and household items; see web appendix for full details. Because selection requires providing a reason or justification for item inclusion in the set of items kept, and because order (vs. disorder) facilitates comparisons within category to provide this justification, the resulting comparisons result in decision conflict that provides the impetus to retain more items when selecting from an ordered set of options. Finally, dis/order effects are due primarily to differences in the retention of items within category, consistent with our theorizing that disorder facilitates downsizing by inhibiting comparisons of items.

GENERAL DISCUSSION

What is a useful approach to reduce belongings when downsizing? We investigate how dis/order (messy vs. tidy items) impacts downsizing decisions in various real and hypothetical downsizing contexts (candy, clothing, food, gift cards, and household items) and find consumers retain fewer items when selecting from disorder. This downsizing effect emerges because disorder inhibits the comparisons that underlie the tendency to retain items (study 2A); as a result, the downsizing effect is especially likely to emerge when comparison tendencies are high (study 2B). We also demonstrate two important boundary conditions: waste aversion (study 4) and the decision-making strategy (i.e., selection versus rejection) (study 5). Together, these

findings attest to robust effects of dis/order on downsizing that run contrary to lay and expert beliefs and that have interesting managerial and theoretical implications as follows.

Managerial and Theoretical Contributions

First, we 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), and younger people wanting to simplify (e.g., tiny house movement; Mullins 2010) – 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 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 ways to reduce the total number of items when downsizing.

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).

Third, we shed light on the underlying psychological process: 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.) Order, and the comparisons it facilitates, are a disadvantage when trying to downsize. This adds to our understanding of comparison processes (including their role in maximizing; Chowdhury et al. 2009; Huang and Zeelenberg 2012; Iyengar et al. 2006; Ma and Roese 2014; Schwartz et al. 2002).

Fourth, we identify waste aversion and decision-making strategy as important boundary conditions of the phenomenon. We find that waste aversion is especially likely to thwart downsizing when consumers downsize from an ordered (vs. disordered) set because it exacerbates the tendency to retain items within a category. Fifth, 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 and is accentuated by disorder. 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.

Finally, there may be benefits of the present research to consumers faced with downsizing tasks. Specifically, consumer lay beliefs run contrary to our findings: they associate order and rejection with downsizing and, as a result, may follow effortful and counterproductive downsizing advice that emphasize organization and tidying (e.g., Trulia 2016).

Limitations and Future Research

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 two pilot studies that surveyed real downsizers,

consequential laboratory studies (1A, 4), and real downsizing in the home (1B). We also surveyed consumers and organizing professionals (web appendix). Hypothetical studies allowed us to better understand process, which was more difficult in less controlled, real downsizing studies.

Second, downsizing is almost certainly multiply determined. We have attempted to rule out various alternative explanations (e.g., value, quality, quantity, feelings), not only through measurement but also through design of our studies (e.g., alternative manipulations of dis/order) while focusing in on the role of comparison processes. Having said that, why don't consumers retain *fewer* items following comparisons? Such a comparison process might conceivably highlight the substitutability of items or dominance of one item over another. One explanation is that consumers are averse to waste, both in terms of the money and time spent acquiring the items (e.g., sunk cost bias), but also averse to unused utility (Arkes 1996; Bolton and Alba 2012). For example, a consumer who owns several pairs of jeans might reserve one pair for special occasions and another for everyday use, while retaining another in anticipation of wear-and-tear. Moreover, items are often not perfect substitutes: a comparison process that highlights differentiating attributes rather than common (and redundant) attributes (e.g., color and style attributes in clothing; Chakravarti and Janiszewski 2003; Chakravarti, Janiszewski, and Ulkumen 2006) would heighten decision conflict, which is resolved by keeping rather than discarding items in the set. Finally, downsizing attached to major life events might create uncertainty about future needs (e.g., moving for a new job; making space in anticipation of the birth of a child, in-laws moving in). The current work begins the conversation on how individual consumers make downsizing decisions, and future research is merited to better understand why specific items are retained or not.

Third, we limited our investigation to dis/order, waste aversion, and selection/rejection strategy, with a focus on the number of items retained (e.g., rather than, say, the percent retained by volume). We acknowledge that there may be other potentially important aspects of downsizing and underlying mechanisms 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.

Downsizing Approaches. 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 how those dimensions affect downsizing. For example, what is the impact of temporal perspective (Schelling 1982)– 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 ("putter through your clutter"; Moore 2017)? Likewise, is it helpful to establish a percentage target before beginning the process (e.g., 50%, half my jeans)? 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?

Downsizing Satisfaction. Our research focused on the number of items retained as a function of downsizing approach. 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 we find that fewer items are retained when selecting from disorder, will consumers be satisfied? One possibility is that satisfaction will track amount downsized, 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 other downsizing processes (Mogilner, Rudnick, and Iyengar 2008). The latter could perhaps account for consumer lay beliefs: if the actual impact of downsizing strategies is difficult to judge, then consumers may rely upon seemingly sensible strategies that 'feel right' (cf. Avnet, Pham, and Stephen 2012). Additionally, we might downsize the 'wrong' items (should there be normative considerations) if the proper strategy is not followed.

The Role of Affect. 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). While we did not find that feelings (i.e., positive, negative) explained our effect, a better understanding of those felt emotions and how to manage them may be important for some consumers to successfully downsize. For example, how do emotions arising from attachment to belongings (Winterich, Reczek, and Irwin 2017) affect downsizing? Likewise, we find that consumers high in waste aversion are more impacted by the dis/order effect. How can consumers mitigate negative emotions arising from waste aversion during downsizing (Bolton and Alba 2006)?

Who is Downsizing and Why? Another interesting avenue for downsizing research focuses on who is downsizing and why? Pilot A provided a glimpse at why and what people

decided to downsize (e.g., space needs and clothing). 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 successful 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 efficacy, satisfaction, and so on?

Implications

We close with a discussion of the consequences of our research not only for consumers but also for marketers in relevant industries (such as home organization and storage). First, downsizing advice – prevalent in many forms in the popular media – does not align with our results. For example, a quick perusal of YouTube reveals downsizing and decluttering advice to fill trash bags/boxes 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) are keenly interested in how best to tailor the advice they give to their clients. Second, we find that consumers' lay beliefs surrounding downsizing also do not align with our results: 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 successful in reducing the total number of items. Hence, popular advice and lay beliefs may undermine consumers' own efforts to downsize.

Third, this research has important implications for various industries related to downsizing. On the one hand, some industries arguably benefit when downsizing is lacking: 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 is $11.8 billion (Freedonia Group 2017). These industries may be able to leverage consumers' lay beliefs about downsizing to fill their coffers, both literally and figuratively. On the other hand, other industries benefit from 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, 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 the 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 consumers and society– is sorely needed.

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