Effects of Messiness on Preferences for Simplicity

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Abstract

This research examines the effect of experiencing messiness, induced by a messy environment or by priming the concept of messiness, on consumers. We propose that messiness is an aversive state and consumers are motivated to attenuate this state by seeking simplicity in their cognitions, preferences, and choices. Six experiments support our theorizing. Experiments 1a-1c (conducted in the laboratory) and experiment 2 (conducted in the field) demonstrate that when messiness is salient, consumers form simpler product categorizations, are willing to pay more for a t-shirt with a simple picture, and seek less variety in their choices. Experiment 3 brings additional evidence for the underlying role of the need for simplicity by showing that when the need for simplicity is satiated, the effects of messiness disappear. A final experiment shows a boundary condition of the messiness effect: political conservatives are more susceptible to messiness primes compared to liberals.

Business and government managers often promote "clean desk" policies to avoid disorganized offices and messy desks, for the purpose of boosting work efficiency and productivity (Abrahamson and Freedman 2008). This practice is based on the conventional wisdom that a disorganized and messy environment can clutter one's mind and complicate one's judgments (Belk, Seo, and Li 2007; Williams and Bargh 2008), as people's perceptions of their environment often translate into corresponding behavior (i.e., the perception-behavior link, Dijksterhuis and Bargh 2001). However, not all evidence supports this conventional link between a messy environment and a messy mind, and some anecdotal evidence even points to the opposite direction. For instance, academic researchers often can efficiently produce their brilliant work in their disorganized and messy offices, Albert Einstein with his stupendous disarray being a good example (Abrahamson and Freedman 2008). The confusion concerning the intrapersonal effect of messiness can be partly attributed to the surprisingly little research on the topic.

Indeed, despite its prevalence, little is known about the concept of messiness in the academic literature and, consequently, its effects on human behavior. In the present research, we present a first attempt at studying the behavioral downstream effects of messiness. Specifically, we focus on the disorganized or not well arranged facet of messiness, and examine how and why messiness (induced by a disorganized environment or by cognitively priming the concept of messiness) affects consumers' cognitions, preferences, and choices. Opposite to the conventional idea that messy environments may elicit messy thoughts, we propose and show that experiencing messiness leads consumers to display a general inclination towards simplicity in their cognitions (organizing information in a simpler manner), preferences (preferring t-shirts with a simple picture), and choices (seeking less variety in a choice task). The reason, as we will argue, is that messiness is aversive to consumers, and they seek simplicity in their choices and judgments to insulate themselves from this aversive state. In several laboratory experiments and a field study, we find support for the effects of messiness on consumers' responses and show empirical evidence for the crucial underlying role of need for simplicity. We also establish a boundary condition (political ideology): the effect of messiness only occurs among conservatives who are more concerned about disorganization and messiness, but not among liberals (Carney et al. 2008).

This research shows that the effect of messiness on individuals' cognitions and choices does not operate via a simple perception-behavior link, but is motivated through a need for simplicity. Furthermore, as messiness is a prevalent tangible store atmospheric, the findings from our field study confirm that perceived messiness in a store can have important downstream effects on real-life consumer behavior. Finally, the current research contributes to the political ideology literature by showing that non-politically related situational cues can have different effects for liberals versus conservatives.

THEORETICAL BACKGROUND

Messiness is a multi-faceted concept, encompassing being disorganized, dirt, and violation of social norms (Abrahamson and Freedman 2008; Keizer, Lindenberg, and Steg 2008). This article focuses on the "disorganized" side of messiness. Derived from the priming literature, previous research conjectured that messy or disorganized

environments can prime a messy mind and alter people's behavior in the same direction (Belk et al. 2007; Williams and Bargh 2008). Indeed, the behavioral priming literature showed that consumers' mindsets and behaviors often assimilate to contextual cues. For example, dollar signs on the background of a website affect the perceived importance of price-related attributes (Mandel and Johnson 2002). These assimilative priming effects even occur when the primed concept is negative. In support of this notion, Gino, Norton, and Ariely (2010) found that wearing a counterfeit version of sunglasses made people cheat more than wearing the authentic version of the product. Therefore, it seems plausible to assume that a messiness prime leads to complex cognitions and behavior.

However, we propose that experiencing messiness may induce simplicity in consumers' cognition and choices, because messiness is often aversive and people seek to compensate for and diminish aversive states (Tice, Bratslavsky, and Baumeister 2001). The aversion of messiness might root in the assumption that disorganization and messiness impair the efficiency and survival of complex systems (Elias 2000; Simon 1962), such as societies, organizations, mechanical systems, and even the human brain. Because messy environments often lack structure compared to less messy (tidy) environments, they make it more difficult to detect objects and less clear what the guiding norms are (Henderson et al. 2009). Furthermore, being organized and avoiding messiness hold certain social value. Children are educated at an early age to clean up toys and games to avoid messing up the playfield (Stifter, Spinrad, and Braungart-Rieker 1999). Finally, a messy state, as opposite to organized states, is associated with undesirable traits and personalities (Belk et al. 2007; Noftle and Robins 2007). For example, people tend to tidy their desks and rooms in expectation of visits and assessment, because a messy room can serve as a cue to infer low self-discipline and low conscientiousness of the owner (Gosling et al. 2002).

Several streams of literature converge on the notion that a messy environment and the related experience of messiness are aversive. As a general rule, people tend to insulate themselves from aversive states directly or indirectly (Tice et al. 2001). For instance, Rucker and Galinsky (2008) found that consumers with low compared to high power preferred products that could compensate for their state of low power, as exemplified by an increased willingness to pay for a product associated with status. When direct restoration is not available or the source of the aversive feeling is not clear, people strive to insulate themselves from the aversive state by seeking compensation in other domains. Consistent with this notion, researchers have shown how consumption choices and quantities can serve as a buffer against death anxiety (Liu and Smeesters 2010; Mandel and Smeesters 2008). For instance, activating death thoughts led consumers to choose a less indulgent option when females' body esteem was important to their self-concept (Ferraro, Shiv, and Bettman 2005). Similarly, Kay et al. (2008) proposed that lack of personal control motivates people to psychologically imbue their environments with sense, non-randomness, and order.

To defend themselves against an aversive messy state, we conjectured that people would strive for simplicity. Indirect evidence from several sources lends support to our conjecture. Developmental psychologists observed that environmental confusion, high levels of home disorganization and crowding, caused children to develop strategies to filter out a great amount of unwanted but useful stimulation (i.e., they ignore available

information; Evans et al 1991; Matheny et al. 1995). In a similar vein, adults tend to use mental generalizations of previous experiences (e.g., schemata, scripts, attitudes) to manage ambiguous and overloaded information (Neuberg and Newsom 1993). Recent research showed that adults engage in stereotyping to cope with chaos (Stapel and Lindenberg 2011), as stereotyping represents a simplified image of all members of a social category (Fiske and Neuberg 1990). Despite the different strategies adopted by children and adults, these findings highlighted people's ubiquitous need for simplicity in a disorganized environment. Hence, we hypothesize that individuals exposed to messiness (compared to those exposed to tidiness or those in a control condition) will be motivated to psychologically insulate themselves from the messiness state by showing a general inclination towards simplicity in their cognitions, preferences, and choices. This simplicity might be expressed in different ways depending on the task. Consumers may structure information in a simpler way when asked to categorize products, they may prefer a product that looks simpler when choosing between two alternatives, and they may form simpler choice sets when making multiple choices within a category.

We test our hypothesis in six experiments. Experiments 1a–1c and 2, conducted in the laboratory and a supermarket respectively, demonstrated that experiencing messiness (vs. not) induced participants to form simpler categorizations, pay more for a t-shirt with a simple picture, and seek less variety in their choices, because messiness activates a need for simplicity. Throughout these experiments, we controlled for resource depletion, positive and negative affect, stress, and time to finish the tasks to account for alternative explanations for our findings. In experiment 3, we tested whether the effect of messiness was eliminated when the motive to simplify was satiated in an intermediary task. Finally, in experiment 4, we examined whether political ideology moderates the effect of messiness on simplicity seeking. Specifically, we expected that the effect would mainly occur for conservatives (but not for liberals), because they attach more value to being organized and are more concerned about disorder (Carney et al. 2008).

EXPERIMENT 1A

Experiment 1a served as an initial test of whether experiencing messiness would activate a need for simplicity and whether this simplicity tendency would reflect in consumers' cognitions. We examined this effect in the context of consumer categorization. Product categorization is of importance to consumers, as it aids consumers in their perception and understanding of products (Loken 2006). On a cognitive level, the categorization of products also reflects consumers' cognitive simplicity/complexity (McConnell and Brown 2010; Scott 1969). If messiness operates via a perception-behavior link, then experiencing messiness should lead participants to categorize products in a more complex manner. However, if our theorizing is correct, and due to its aversiveness, messiness activates a need for simplicity, then experiencing messiness should cause participants to categorize products in a simpler manner, forming fewer categories and having less overlap between categories.

Method

Forty-eight undergraduates (19 women) participated in this study in partial fulfillment of course credits. In all experiments, participants were told that they would participate in several unrelated tasks. Participants were randomly assigned to the messy, tidy, or control condition. Participants were seated in an individual cubicle, where there was a desk with a keyboard and a computer screen hanging on the wall. In the messy condition, crumpled paper, pens, and pieces of paper were left messily on the desk. In the tidy condition, participants also found these items on their desk, but they were well-organized, paper in a pile and pens neatly arranged. In the control condition, none of these items were on participants' desks (appendix A). To ensure that the manipulation indeed activates messiness and disorganization, we conducted a pretest. Forty-five participants were randomly assigned to a messy cubicle, a tidy cubicle, or a control cubicle. They were asked to rate their environment on several dimensions: "dirty", "disorganized", "complex", "cluttered", "turbulent", and "messy" using a 1 (not at all) to 7 (very much) scale. The three cubicles only differed on the messy ($F(2, 42) = 29.07$, $p < .001$) and disorganized ($F(2, 42) = 6.26$, $p < .01$) dimensions, but did not differ on the dimensions of dirty ($F(2, 42) = 1.68$, $p > .19$), complex ($F(2, 42) = 1.66$, $p > .20$), cluttered ($F(2, 42) = 1.66$, $p > .20$), and turbulent ($F(2, 42) = 0.05$, $p > .94$), table 1.

Insert table 1 about here

First, participants completed a measure of need for simplicity. We used four items (i.e., "It upsets me to go into a complicated situation," "I would like to simplify my life as much as I can," "I would like to keep things simple," and "I am bothered by complicated things") to assess participants' need for simplicity. Participants rated the items on a 1 (*strongly disagree*) to 9 (*strongly agree*) scale. We aggregated these four items to create a composite index of need for simplicity ($\alpha = .90$).

Next, participants completed the PANAS to assess their current mood (Watson, Clark, and Tellegen 1988). We added two items (agitated and stressed) to control for participants' stress feelings. Further, to show direct evidence regarding the aversive nature of messiness, we asked participants to rate to what extent they experienced aversive feelings at the moment on a scale from 1 (not at all) to 7 (very much).

Then, in a computer task, participants were asked to sort 33 products into groups on the basis of how they thought the products fit together. The instruction indicated that participants were free to form any number of groups, to use each product any number of times (or not use at all), and to include any number of products in each group. We coded participants' categorization results using Scott's *H* measure to assess their cognitive and categorization simplicity/complexity (Linville 1982; Neuberg and Newsom 1993). The Scott's *H* measure takes into account the amount of information available, the number of groups formed, and the extent to which information was sorted into multiple groups. Previous research has shown that lower scores on this measure represent a simpler cognitive structure and less complicated categorization (Neuberg and Newsom 1993).

Finally, as a manipulation check, participants answered two questions about how messy/tidy they perceived the desk (1= *not at all* and 7 = *very much*). At the end, participants answered several questions about the possible purpose of this study. None of them were able to guess the hypothesis under investigation. Also, none of the participants

raised any suspicion in this or any of the other studies regarding any relatedness between the different phases of the study.

Results and Discussion

Manipulation check. The manipulation check showed that participants in the messy cubicle indeed perceived their desks as messier ($M = 4.50$, $SD = 1.05$) than those in the tidy ($M = 2.25$, $SD = 0.66$, $F(1,45) = 62.85$, $p < .001$), and control cubicles ($M = 2.25$, $SD = 0.63$, $F(1,45) = 62.85$, $p < .001$). The latter two conditions did not differ ($F < 1$, *ns*). As expected, participants in the messy cubicle ($M = 4.06$, $SD = 1.29$) indeed experienced stronger aversive feelings than those in the tidy ($M = 3.06$, $SD = 0.77$, $F(1,45) = 6.82$, $p < .05$), and control cubicles ($M = 2.94$, $SD = 1.12$, $F(1,45) = 8.63$, $p < .01$), while the latter two did not differ ($F < 1$, *ns*).

Categorization. Each participant received a Scott's *H* score for their categorization simplicity/complexity based on the product-sorting task. A smaller Scott's *H* indicates greater simplicity. As expected, a single-factor ANOVA revealed a main effect of mess on the Scott's *H* score ($F(2, 45) = 6.86$, $p < .01$). In the messy condition, participants' categorization was simpler ($M = 2.27$ $SD = 0.42$) than in the tidy ($M = 2.91$, $SD = 0.63$; $F(1, 45) = 11.84$, $p < .01$), or control conditions ($M = 2.80$, $SD = 0.52$, $F(1, 45) = 8.19$, $p < .01$). The latter two conditions did not differ ($F < 1$, *ns*).

Need for simplicity. A single-factor ANOVA revealed a significant effect of prime on the need for simplicity measure ($F(2, 45) = 3.60$, $p < .05$). Participants in the messy condition ($M = 5.56$, $SD = 1.33$) displayed a higher need for simplicity than those in the tidy ($M = 4.56$, $SD = 1.24$; $F(1, 45) = 5.73$, $p < .05$), and control conditions ($M = 4.63$, $SD = 0.93$; $F(1, 45) = 5.04$, $p < .05$). The latter two conditions did not differ ($F < 1$, *ns*).

Mediation. Next, we examined the indirect effect of messiness on the simplicity of participants' categorization through need for simplicity (Preacher and Hayes 2004; Zhao, Lynch, and Chen 2010). As there are three levels in the messiness condition, we used two dummy variables to represent messiness and tidiness in the regressions in this experiment and experiments 1b and 1c. In all three experiments, the tidiness dummy was not significant in any of the equations (*t*s < 1, ns). Using 5,000 bootstrap samples, this analysis revealed a significant indirect effect of the messiness dummy on participants' categorization score through need for simplicity with a 95% confidence interval (CI) excluding zero (-0.47 to -0.04). See table 2 for a step-by-step break down of the mediation analysis.

Insert table 2 about here

Alternative explanations. One alternative explanation is that messy desks caused participants to leave the cubicles sooner and spent less time on the tasks, which produced the observed results. However, total time (in minutes) spent on the tasks of this study was not different across the three conditions ($M_{messy} = 9.15$, $SD_{messy} = 1.24$; $M_{tidy} = 8.34$, $SD_{tidy} = 0.86$; $M_{control} = 8.57$, $SD_{control} = 0.82$, $F(2, 45) = 1.37$, $p > .26$). Furthermore, positive ($\alpha = .80$) and negative affect ($\alpha = .78$) and feelings of stress and agitation also did not vary as a function of the manipulation (*F*s < 1.10, *p*s > .34). This null effect on mood and

feelings of stress is consistent with other literature studying aversive states, such as feelings of powerlessness (Rucker and Galinsky 2008), chaos (Stapel and Lindenberg 2011), and lack of personal control (Kay et al. 2008). This seems to suggest that psychological states can be aversive to consumers, but aversion in itself is not a sufficient antecedent for inducing negative moods.

Opposite to conventional wisdom, we found that participants working at a messy desk displayed simpler cognitions. This is because messiness induces a need for simplicity.

EXPERIMENT 1B

The main purpose of experiment 1b was to conceptually replicate experiment 1a using a different messiness prime in a different paradigm: willingness to pay. Our aim is to show that the messiness effect is not limited to product categorizations but can also extend to preferences for visual simplicity. We measured participants' willingness to pay for two t-shirts that only differed in the front picture (simple looking vs. complex looking). Based on our theorizing, participants in the messy condition should have a stronger preference for the simple looking t-shirt over the complex looking t-shirt. Therefore, we expected that, compared to participants in the tidy and control conditions, those primed with messiness would like to pay more for the simple t-shirt, but pay less for the complex one. We also expected this effect to be mediated by need for simplicity.

Furthermore, rather than using messy cubicles, we employed a subtle priming procedure to cognitively activate the concept of messiness. Another aim of this experiment was to rule out the alternative explanation that messy environments may distract participants from their focal task or increase their cognitive load, and as a result deplete their self-regulatory resources. Hence, we assessed self-regulatory resource depletion using an anagram task (Baumeister et al. 1998). If messy environments or messiness primes distract participants and deplete their regulatory resources, we should find that participants in the messiness condition perform worse on the anagram tasks than their counterparts in the tidiness and control conditions.

Method

Sixty undergraduates (33 women) participated in this study in partial fulfillment of course credits. First, under the guise of a "Language Comprehension" task (Srull and Wyer 1979), participants completed a scrambled sentences test to activate the concept of messiness. This test consisted of 30 items, each with five words presented in a scrambled order. Participants had to construct a sentence using four of the five words. In the messiness priming condition, half of the 30 items contained a word that was related to messiness (see appendix B for the Dutch words we used and the English translation). In the tidy priming condition, half of the items consisted of tidiness-related words (using words like orderly and neat). In the control priming condition, none of the words were related to messiness or tidiness.

After the priming phase, participants filled out the same need for simplicity measure ($\alpha = .93$) as in experiment 1a. Then, they saw pictures of the simple and the complex t-shirt and were asked to indicate the price (in Euros) they were willing to pay

for each of them. Both the simple and the complex looking t-shirts were black, but contained a different front picture, which consisted of several lines that formed either a simple picture or a complex picture (appendix C). A pretest, using a 7-point scale, showed that the t-shirt with a simple picture was perceived as having a simpler (M = 5.20, SD = 0.41) and less complex appearance (M = 2.50, SD = 0.51) than the t-shirt with a complex picture (M_{simple} = 2.45, SD_{simple} = 0.61, $t(19) = 15.64$, $p < .001$; $M_{complex}$ = 5.00, $SD_{complex}$ = 1.26, $t(19) = -8.24$, $p < .001$). The two t-shirts did not differ in terms of liking, excitement, stimulation, meaningfulness, and familiarity (ts < 1.51, $p > .14$). Both t-shirts were presented to each participant, but the order of presentation was counterbalanced. The order did not affect the results and is therefore not further discussed.

Finally, participants performed an anagram task. They were given five minutes to complete as many anagram items as possible. It has been shown that depleted individuals resolve fewer anagrams compared to non-depleted individuals (Baumeister et al. 1998).

Results and Discussion

Willingness to pay. A 3 (prime: messy vs. tidy vs. control) × 2 (product: simple vs. complex) mixed ANOVA, with prime as a between-participants factor and product as a within-participants factor was conducted on the willingness to pay measure. This analysis revealed a main effect of product ($F(1, 57) = 6.71$, $p < .05$), which was qualified by a significant interaction between prime and product ($F(2, 57) = 9.36$, $p < .001$), figure 1. There is an effect of prime on the willingness to pay for both the simple ($F(2, 57) = 3.99$, $p < .05$) and the complex t-shirt ($F(2, 57) = 5.65$, $p < .01$). Participants in the messy condition were willing to pay more for the simple t-shirt (M = 22.00, SD = 8.15) than those in the tidy (M = 17.56, SD = 6.16, $F(1, 57) = 4.03$, $p < .05$) and control conditions (M = 16.24, SD = 6.07, $F(1, 57) = 7.34$, $p < .01$), whereas they wanted to pay less for the complex one (M = 12.43, SD = 3.63) than those in the tidy (M = 17.17, SD = 6.48; $F(1, 57) = 7.47$, $p < .01$) and control conditions (M = 17.48, SD = 5.84; $F(1, 57) = 9.18$, $p < .01$). Participants in the tidy and control conditions did not differ (Fs < 1, ns).

Insert figure 1 about here

Need for simplicity. A single-factor ANOVA revealed a significant effect of prime on need for simplicity ($F(2, 57) = 10.08$, $p < .001$). Participants in the messy condition (M = 6.05, SD = 0.89) had a greater need for simplicity than those in the tidy (M = 4.73, SD = 1.35; $F(1, 57) = 14.58$, $p < .001$), and control conditions (M = 4.75, SD = .97; $F(1, 57) = 15.25$, $p < .001$). The latter two conditions did not differ on this measure ($F < 1$, *ns*).

Mediation. We tested whether need for simplicity mediated the effect of messiness on willingness to pay in the simple and complex t-shirt conditions respectively (see table 2). Bootstrap analyses, using 5,000 bootstrap samples, revealed a significant indirect effect of messiness dummy on participants' willingness to pay for the simple t-shirt (95% CI: 0.49 to 5.66) and the complex t-shirt (95% CI: -5.62 to -1.44).

Alternative explanations. The manipulation did not affect the depletion measure ($F < 1$, *ns*). The number of correctly solved anagrams generated in the messy condition (M = 12.62, SD = 5.91) did not differ from those in the tidy (M = 11.39, SD = 5.85) and

control conditions (M = 13.29, SD = 6.09). This suggests that the messiness prime did not deplete participants' self-regulatory resources. Further, positive (α =.81) and negative affect (α = .84) did not vary as a function of the manipulation (Fs < 1, *ns*).

Experiment 1b corroborated the findings of experiment 1a with a different activation of messiness and a different dependent measure: willingness to pay. Further, the effect is not induced by resource depletion.

EXPERIMENT 1C

The aim of experiment 1c is to show that the effect of messiness can also extend to a behavioral level. Specifically, we tested to what extent participants seek variety in their consumption choices, when messiness is activated. As more varieties in a choice set entail less simplicity (Kahn 1995), we expected the need for simplicity induced by experiencing messiness to lead consumers to form simpler choice sets (and display less variety). In addition, we again controlled for resource depletion in this study, using a Stroop task (Fennis, Janssen, and Vohs 2009).

Method

Forty-five undergraduates (26 women) participated in this study in partial fulfillment of course credits. The manipulation of the messy, tidy, and control conditions is the same as in experiment 1a. Participants completed the need for simplicity measure as in previous studies (α = .86). Then, they engaged in the Stroop task. Participants received 32 randomized trials, of which 8 were congruent trials (a stimulus word was presented in a font color that matched its semantic meaning) and 24 were incongruent trials (a stimulus word was presented in a font color that mismatched its semantic meaning). Participants were to report the font color of each word as quickly as possible. Average reaction times on the Stroop task served as the depletion measure. Depleted participants should spend more time to report the ink color and make more errors compared to less depleted participants.

Finally, participants completed the choice measure outside the cubicles. After participants left the cubicles, the experimenter told participants that they could choose five candies as a small gift for their participation. There were five boxes with five different colors and flavors of candies (same brand and same size) on the experimenter's desk. Participants were free to choose any combination of five candies.

Results and Discussion

Manipulation check. As in experiment 1a, participants in the messy cubicle rated their desks as messier (M = 4.67, SD = 0.84) than those in the tidy (M = 2.10, SD = 0.71, F (1,42) = 90.75, p < .001), and control cubicles (M = 2.27, SD = 0.65, F (1,42) = 79.35, p < .001). The latter two conditions did not differ (F < 1, *ns*).

Variety seeking. We measured the simplicity of choice sets through the number of different candies participants chose, with fewer different candies chosen reflecting simpler choice sets (Goukens et al. 2007). A single-factor ANOVA revealed the predicted

main effect of messiness on the number of different candies chosen ($F(2, 42) = 3.60$, $p < .05$). Participants in the messy condition indeed picked fewer different candies ($M = 2.80$, $SD = 1.27$) than those in the tidy ($M = 3.73$, $SD = 1.22$; $F(1, 42) = 4.65$, $p < .05$) and control conditions ($M = 3.87$, $SD = 1.06$; $F(1, 42) = 6.07$, $p < .05$). The tidy and control conditions did not differ on this measure ($F < 1$).

Need for simplicity. A single-factor ANOVA revealed a significant effect of the messiness conditions on the need for simplicity measure ($F(2, 42) = 3.23$, $p < .05$). Participants in the messy condition ($M = 5.64$, $SD = 1.34$) had a greater need for simplicity than those in the tidy ($M = 4.77$, $SD = 1.19$; $F(1, 42) = 4.18$, $p < .05$), and control conditions ($M = 4.64$, $SD = .96$; $F(1, 42) = 5.42$, $p < .05$). Need for simplicity in the tidy and control conditions did not differ ($F < 1$).

Mediation. As in previous experiments, we again tested whether need for simplicity mediated the effect of messiness on participants' variety seeking (see table 2). A bootstrap analysis, using 5,000 bootstrap samples, showed that need for simplicity fully mediates the effect of messiness on variety-seeking (95% CI: -0.93 to -0.04).

Alternative explanations. The average reaction times and errors of the Stroop task did not differ across conditions (Fs < .11, ps > .89), suggesting that resource depletion cannot account for the effect of messiness. Further, positive ($\alpha = .79$) and negative affect ($\alpha = .82$) did not vary as a function of the manipulation (Fs < 1, *ns*).

Experiment 1c demonstrated that participants in a messy room sought less variety in their choices than those in a tidy or control room. This effect is mediated by need for simplicity.

EXPERIMENT 2

Experiment 2 sought to replicate the effect of messiness in a real store setting. Messiness often appears in stores: disorganized shelves, unsorted merchandise, and messy clothes racks. The prediction is that a messy and disorganized store increases consumers' need for simplicity, which will further affect their shopping behavior, such as a decreased desire for choice variety. In this field study, we did not directly manipulate messiness but asked participants to rate how disorganized they perceived the store. We gave each participant five euros to buy five candy bars of any brand and in any combination with this money. We were interested in the extent to which participants' perceived messiness of the store would affect the variety they sought in their purchases.

Method

This study was conducted outside a small supermarket on a weekday between 4pm and 6pm. Two experimenters approached people outside the store for participating in the study, and told them that the study concerned shopping behavior. If they were to participate, they would get €5 to shop for 5 candy bars based on their own preference. Afterwards, they would answer a number of questions and they could keep the candy bars as a gift. The study would take no more than 10 minutes to complete.

Twenty-four people (12 females; average age = 27.92) agreed to participate. They were instructed to only buy candy bars on this shopping trip. The experimenter

emphasized that participants should choose candy bars based on their own preferences, as they do on a regular shopping trip. Then, participants entered the store for the shopping task. The candy bar section was located between the middle and the back of the store. Participants had to walk through most of the store to reach the candy bars. There were 12 different types of candy bars on the shelves and the average price was € 0.37.

As it was not a big supermarket, the experimenters could monitor participants' entire shopping trip from the entrance of the store. None of the participants engaged in other activities (e.g., stop to take phone calls) than shopping for candy bars. The experimenter also recorded the time participants spent from the moment they entered the store until the moment they stood at the counter. After paying for the candy bars at the counter, participants walked out of the store, handed in their receipts, and filled out a short questionnaire. In the questionnaire, participants first answered three questions (1= *not agree*, 9 = *totally agree*) concerning the store's messiness and disorganization (α = .86): "The shelves in the store are rather disorganized," "Things in the store are well arranged," (reverse coded) and "I find the store disorganized and messy." They also answered a question about how busy and crowded the store was ("There are many people in the store, and it is busy in there") on a 9-point scale (1= *not agree*, 9 = *totally agree*). Then, participants were instructed to rate the need for simplicity measure based on their current feelings (α = .87). Finally, participant rated the item "How do you feel right now?" (1 = *very bad*, 9 = *very good*), and indicated their age and if they had planned to buy candy bars before they participated in the study. Only three people planned to buy candy bars, but that did not affect the results.

Participants were also probed for their suspicion about the purpose of the study. None of them could guess the purpose. At the end, participants were fully debriefed about the aim of the study.

Results and Discussion

Variety seeking. As in experiment 1c, we counted the number of different candy bars participants chose, and regressed it on the averaged store messiness measure, gender, and age. This regression only yielded a significant effect of store messiness (B = -0.36, $t(20)$ = -2.18, $p < .05$). Consistent with our expectation, the negative coefficient suggested that the more disorganized participants perceived the store the less variety they sought.

Need for simplicity. The same regression on need for simplicity also only revealed a significant effect of store messiness (B = 0.48, $t(20)$ = 2.37, $p < .05$). Participants' need for simplicity increased as their perception of store messiness increased.

Mediation. When both need for simplicity and store messiness were used as explanatory variables for the number of different candy bars chosen, the effect of store messiness disappeared (B = -0.18, $t(19)$ = -1.04, $p > .31$) while need for simplicity is a significant predictor of the dependent variable (B = -0.38, $t(19)$ = -2.30, $p < .05$). A bootstrap analysis (5,000 bootstrap samples) showed that need for simplicity fully mediates the effect of messiness on the number of candy bars (95% CI: -0.48 to -0.005).

Control variables. The store crowdedness measure did not affect participants' variety seeking ($t < 1$, *n*s). The average store messiness rating did not influence the time participants spent, their feelings, and the average price of the candy bars bought (*t*s < 1.05,

*p*s > .31).

Experiment 2, using self-reported messiness perceptions, replicated the findings of experiment 1c in a real-world retail setting. Participants who perceived the store as messier indeed sought less variety. This effect was mediated by need for simplicity. We did not find an effect of store crowdedness on participants' variety seeking (Levav and Zhu 2009), presumably because there was not enough variance in store crowdedness.

EXPERIMENT 3

The findings of experiments 1a–1c and 2 suggested that experiencing messiness activates a need for simplicity, which further guides consumers' cognitions and behavior. In experiment 3, we intended to bring further evidence to corroborate the role of need for simplicity. If experiencing messiness induces a need for simplicity, then an intervention that satiates this need should break the link between messiness and simplicity. To examine this hypothesis, we offered participants an opportunity to satiate the need for simplicity, by giving them a task in which performance yields a simple picture.

Method

Eighty-six undergraduates (36 women) participated in this study in partial fulfillment of course credits. Upon arrival at the lab, participants were randomly assigned to the conditions of a 2 (prime: messy vs. tidy) × 3 (dots: simple vs. neutral vs. no) design. First, participants were primed with either messiness-related words or tidiness-related words, as in experiment 1b. We dropped the control prime condition, as we consistently found that the tidy and control conditions do not differ.

In the next phase, we manipulated whether participants were able to satiate the need for simplicity. Under the guise of a pretest for a future study, participants engaged in a connect-the-dots task, which is popular among kids. They were instructed to connect the numbered dots on a piece of paper to form a picture. Participants in the simple-dots condition connected dots to form two rather simple drawings, whereas those in the neutral-dots condition connected dots to form two less simple drawings. Participants in the no-dots condition did not perform a connect-the-dots task.

The dot drawings in the simple-dots condition contained slightly fewer dots (29.5) than those in the neutral-dots condition (33.5), but a pretest indicated that participants did not differ in the time (in minutes) used to complete the tasks (M_{simple} = 1.13, SD_{simple} = 0.24, $M_{neutral}$ = 1.22, $SD_{neutral}$ = 0.32; $t(16) = 0.99$, $p > .33$). Further, the pretest showed that the simple and neutral dot connecting tasks only differed on how simple the final drawings are and the feelings of simplicity they evoke in participants, but they did not require different levels of effort to complete. Specifically, the simple dot-connecting tasks were rated as generating simpler pictures than the neutral ones ("How simple is the final picture?", 1 = *very complex*, 7= *very simple*, M_{simple} = 6.24, SD_{simple} = 0.90; $M_{neutral}$ = 4.65, $SD_{neutral}$ = 1.27; $t(16) = 4.48$, $p < .001$), and evoking more feelings of simplicity than the neutral ones ("Did drawing this picture leave you with a feeling of simplicity or complexity?", 1 = *very complex feeling*, 7 = *very simple feeling*, M_{simple} = 5.00, SD_{simple} = 1.27; $M_{neutral}$= 3.71, $SD_{neutral}$ = 1.16; $t(16) = 3.48$, $p < .01$). The two types of connect-the-

dot tasks did not differ on "How easy (difficult) is it to connect the dots?" ($t < 1$, *ns*).

Following the connect-the-dots task, participants completed the same measure of need for simplicity ($\alpha = .89$) as in previous experiments, and indicated their willingness to pay for two t-shirts, as in experiment 1b.

Results and Discussion

Willingness to pay. To present the results in a more parsimonious way, we created a willingness to pay index by subtracting the willingness to pay for the complex t-shirt from that of the simple t-shirt. Hence, a larger score on this measure indicates a higher willingness to pay for the simple t-shirt (separate analyses led to similar results). A 2 (prime) × 3 (dots) between-participants ANOVA on this measure yielded a main effect of prime ($F(1, 80) = 9.12$, $p < .01$), which was qualified by a significant interaction between prime and dots ($F(2, 80) = 3.67$, $p < .05$), figure 2. As expected, when participants did not have an opportunity to fulfill the need for simplicity, we replicated previous findings, table 3. Specifically, participants in the no-dots condition scored higher on the willingness to pay index when primed with messiness compared to tidiness ($F(1, 80) = 6.60$, $p < .05$). Similarly, participants in the neutral-dots condition also scored higher on the index when primed with messiness compared to tidiness ($F(1, 80) = 9.56$, $p < .01$). However, when participants satiated the need for simplicity by connecting dots to form simple drawings, the effect of messiness disappeared. Participants' willingness to pay in the simple-dots condition did not differ when exposed to messiness primes versus tidiness primes ($F(1, 80) = 0.20$, $p > .65$).

Insert figure 2 about here

Decomposing the results differently, in the messy condition, participants' willingness to pay was reduced after they engaged in a simple-dots task compared with a no-dots ($F(1, 80) = 7.99$, $p < .01$) or a neutral-dots task ($F(1, 80) = 9.77$, $p < .01$). Participants' scores in the no-dots and neutral-dots conditions did not differ ($F < 1$). By contrast, in the tidy condition, the nature of the connect-the-dots task did not affect participants' willingness to pay ($F(2, 80) = 0.10$, $p > .90$).

Need for simplicity. The same 2 × 3 between-participants ANOVA on the need for simplicity measure revealed a main effect of prime ($F(1, 80) = 11.51$, $p < .001$), which was qualified by a significant interaction between prime and dots ($F(2, 80) = 3.54$, $p < .05$), table 3. Participants primed with messiness showed a higher need for simplicity than those primed with tidiness in both the no-dots ($F(1, 80) = 9.02$, $p < .01$) and neutral-dots conditions ($F(1, 80) = 9.37$, $p < .01$). However, when participants had an opportunity to satiate the need for simplicity, need for simplicity did not differ between the messy and tidy conditions ($F(1, 80) = 0.04$, $p > .83$).

Insert table 3 about here

Mediation. We proposed a mediated moderation model in which the type of dots task moderated the effect of the independent variable (prime) on the proposed mediator

(need for simplicity) with the mediator directly influencing the dependent measure (willingness to pay). We tested this model with three equations (Preacher, Rucker, and Hayes 2007; Muller, Judd, and Yzerbyt 2005). Each step of the analysis appears in table 2. The conditional indirect effects showed that need for simplicity mediated the effect of messiness on willingness to pay in both the no-dots (95% CI: 0.68 to 4.03) and the neutral-dots conditions (95% CI: 1.35 to 7.16), but not in the simple-dots condition (95% CI: -1.36 to 2.37).

Again, positive (α =.78) and negative affect (α = .84) did not vary as a function of the manipulations (*F*s < 1, *ns*).

Whereas studies 1a–1c and 2 provided mediational evidence for the underlying role of need for simplicity, the current study used a moderation study to provide further process evidence. Performing a task that helped participants in restoring a sense of simplicity diminished the effect of messiness on their subsequent behavior.

EXPERIMENT 4

Experiment 4 aims to establish a boundary condition for the effect of messiness on the need for simplicity. We conjectured that the effect of messiness would have a stronger effect on people who prefer being organized and are less tolerant to messiness. To test this hypothesis, we measured participants' political ideology. We propose that conservatives will show a higher need for simplicity when messiness is primed compared to when tidiness is primed, whereas liberals should not show this enhanced need for simplicity. This notion is drawn from the political ideology literature stating that political orientation covaries with basic psychological dimensions and personality dispositions, whereby conservatives (vs. liberals) tend to possess stronger needs for order and being organized (Carney et al. 2008; Jost et al. 2003). Some initial evidence suggests that conservatives' bedrooms are in general neater, more organized, and contained more organizational items, relative to the bedrooms of liberals (Carney et al. 2008). This is presumably because conservatives' preference for social stability reflects and reinforces their motivational needs for organization. Hence, we expected that the effect of messiness on willingness to pay for a simple (vs. complex) t-shirt would be stronger for conservative consumers than for liberal consumers, because conservatives should be more motivated to regulate the salience of messiness.

Method

Fifty-six undergraduates (25 women) participated in this study in partial fulfillment of course credits. Participants first filled out a single item measure of liberalism-conservatism. Specifically, participants indicated their political orientation on a scale ranging from 1 (liberal) to 9 (conservative). This measure showed good test-retest reliability and predictive validity in the political orientation literature (Jost 2006; Knight 1999), and has successfully assessed people's political orientation in previous research (Carney et al. 2008; Napier and Jost 2008).

Participants were then randomly assigned to either the messy or tidy condition. The priming of messiness versus tidiness, the need for simplicity measure (α = .87), and

the willingness-to-pay measure were the same as in experiment 3.

Results and Discussion

Willingness to pay. As in experiment 3, we used the willingness to pay index as the dependent variable. Following Aiken and West's (1991) guidelines, we tested our hypothesis with a series of regressions. To test for main effects, participants' willingness to pay was regressed onto prime conditions and the ideology score (mean centered). To test for the interaction, willingness to pay was regressed onto both main effects and the prime × ideology interaction.

The results revealed a main effect of ideology ($B = 2.88$, $t(54) = 5.65$, $p < .001$), which is qualified by a significant prime × ideology interaction ($B = 3.44$, $t(52) = 3.80$, $p < .001$, figure 3). Decomposition of the interaction at one standard deviation above and below the mean for ideology revealed that participants scoring high on the ideology scale (conservatives) were willing to pay more for simple t-shirts in the messy condition compared to the tidy condition ($B = 8.97$, $t(52) = 3.83$, $p < .001$), whereas the willingness to pay of participants scoring low on the ideology scale (liberals) did not differ between the messy and tidy conditions ($B = -3.69$, $t(52) = -1.58$, $p > .12$).

Insert figure 3 about here

Need for simplicity. The same analysis on the need for simplicity measure yielded main effects of prime ($B = 1.04$, $t(54) = 3.23$, $p < .01$) and ideology ($B = 0.41$, $t(54) = 5.17$, $p < .001$), which were qualified by a significant prime × ideology interaction ($B = 0.48$, $t(52) = 3.83$, $p < .001$). Decomposition of the interaction revealed that conservatives had a higher need for simplicity in the messy condition compared to the tidy condition ($B = 1.86$, $t(52) = 5.68$, $p < .001$), whereas liberals' need for simplicity did not differ between the messy and tidy conditions ($B = 0.08$, $t(52) = 0.25$, $p > .80$).

Mediation. We again tested a mediated moderation model in which participants' ideology scores moderated the effect of the independent variable (prime) on the mediator (need for simplicity) with the mediator directly influencing the dependent measure (willingness to pay), see table 2. The conditional indirect effects indicated that need for simplicity mediated the effect of messiness on willingness to pay for conservatives (95% CI: -14.71 to -0.14), but not for liberals (95% CI: -7.15 to 1.89).

As before, positive ($\alpha = .74$) and negative affect ($\alpha = .73$) did not vary in function of the manipulation (Fs < 1.64, $p > .20$).

Experiment 4 demonstrated that the effect of priming messiness on consumers' willingness to pay for t-shirts only appeared for conservatives but not for liberals, because the messiness prime did not elicit a need for simplicity in liberals. These results again suggest that the effect of messiness does not follow a simple perception-behavior link, as the effect of messiness on simplicity seeking mainly occurred among conservatives who find mess and disorganization aversive (Carney et al. 2008).

GENERAL DISCUSSION

Summary and Implications

There has been surprisingly little research on the concept of messiness and how it impacts consumers. Conventional beliefs assume that messiness may influence cognition and behavior following a perception-behavior link, whereby messy environments induce a messy mind (Belk et al. 2007; Williams and Bargh 2008). This research, however, proposed that experiencing messiness rather leads to a simplicity tendency. The reason is that the aversiveness of messiness activates a basic need for simplicity, which is then reflected in subsequent behavior. Across six experiments, we found consistent evidence to support this hypothesis, and established a boundary condition.

Experiments 1a–1c and 2 showed direct support for the effects of contextual messiness on consumers and revealed mediational evidence of the role of need for simplicity. Participants who worked on a disorganized desk, were primed with the concept of messiness, or shopped in a store they perceived as disorganized displayed tendencies towards simplicity in various ways (compared to participants in tidiness or control conditions, or those who perceived a store as less disorganized): they categorized products in a simpler manner (experiment 1a), wanted to pay more for a t-shirt that depicts a simple picture (experiment 1b), and sought less variety in their choices (experiments 1c and 2). Convergent mediational results confirmed that participants' need for simplicity mediates these effects. Experiment 3 corroborated the critical role of the need for simplicity by showing that when this need was satiated, the effect of messiness disappeared. In experiment 4, we found that the effect of messiness did not occur among liberals, because, relative to conservatives, they are less concerned about being disorganized.

Our findings were robust across numerous changes in procedures. The messiness primes were diverse, ranging from environmental cues (experiments 1a, 1c, and 2) to semantic primes (experiments 1b, 3, and 4). Further, we tested our hypothesis in both laboratories and a supermarket. Finally, we showed the effect of messiness in various domains: cognition or categorization, willingness to pay, and choice. Irrespective of these variations, the data showed the same pattern: consumers experiencing messiness or disorganization display a simplicity tendency.

Extant literature on messiness primarily focused on the informational and social function of a messy environment (Gosling et al. 2002; Keizer et al. 2008). The current research empirically examines the intrapsychological effect of messiness, and revealed evidence to challenge the conventional wisdom that messy environments induce a messy mind. Indeed, based on priming literature, researchers speculated that a cluttered room may be detrimental to a clear mind (Williams and Bargh 2008). However, we found that experiencing messiness decreased consumers' cognitive complexity and induced consumers to form simple representations of product information, which is associated with heuristic information processing. Therefore, priming messiness may, for instance, lead to an increased use of heuristics in consumer behavior. Heuristic approaches focus on the use of simple rules and cognitive heuristics, involving less effortful processing of attribute-related information of products. This implies the use of simple situational cues and suggests the employment of noncompensatory evaluative strategies (Chaiken 1980; Petty and Cacioppo 1981). Thus, heuristics such as representativeness or availability

(Tversky and Kahneman 1974) and noncompensatory strategies such as elimination-by-aspects (Tversky 1972) might rather be used when messiness is primed.

Our findings suggest that the effect of messiness is a motivational process rather than operating via a simple perception-behavior link. Specifically, the current studies show that satiating the need for simplicity removes the effect of messiness on subsequent behavior (Experiment 3) and that messiness produces simplifying behavior only when people possess the need for simplifying and being organized (Experiment 4). Political liberals (vs. conservatives) are generally more open-minded and less concerned about instability, ambiguity, and chaos (Jost et al. 2003), and therefore more tolerant of disorganization and messiness (Carney et al. 2008). Therefore, the need for simplicity was not activated by messiness primes for liberals, but was activated for conservatives as they may possess a simplifying motivation to achieve order and organization. This is consistent with past research showing that primes only elicit motivated behavior when people possess the primed goal in question (Fitzsimons, Chartrand, and Fitzsimons 2008). The current research can also be viewed in the context of a growing body of research in the area of environmental psychology and store atmospherics (Argo, Dahl, and Manchanda 2005; Argo, Dahl, and Morales 2008; Meyers-Levy and Zhu 2007). Few studies have examined tangible atmospheric variables that can affect consumer behavior. A recent exception was a set of studies conducted by Levav and Zhu (2009), in which spatial confinement was manipulated. These authors found that consumers in narrower aisles seek more variety than consumers in wider aisles, supposedly because consumers in a confined space react against the incursion of their personal space by seeking more variety. Our findings revealed the consequences of another tangible store atmospheric, that is, messiness. We observed in the field study that increased perceived store messiness or disorganization inhibited consumers' variety-seeking behavior. Thus, whereas spatial confinement promotes variety seeking because it triggers a psychological reactance state, we find that a messy environment hinders variety seeking. Our research findings, together with those of Levav and Zhu (2009), emphasize the importance of store atmospheric factors in influencing consumers' behavior, and that different atmospheric elements can cause completely opposite behavioral consequences.

Limitations and Future Research

While providing interesting insights, our research paves the way for new academic challenges. In our experiments, we consistently found that the tidy condition did not yield different effects than the control condition on the measures tailored to assess the effect of messiness. However, previous research showed that clean scents can foster virtuous behavior (Liljenquist, Zhong, and Galinsky 2010). Future studies may examine if a tidy or clean room may exert similar effects as clean scents for consumers. For instance, tidiness primes may make people stick to the rules (become more normative) and lead them to engage in more ethical consumerims, such as buying green products and fair trade products, or boycotting products for ethical reasons.

In all our studies, we made messiness salient by either exposing participants to an unfamiliar messy environment or priming the messiness concept. That is, the mess was not generated by participants themselves. It remains unclear if self-generated messiness

will produce similar effects as externally imposed messiness. Similarly, people differ in how much mess they can tolerate. A messy environment may induce different feelings for people who are often exposed to a messy surrounding and for those who are used to a tidy environment. Then, it would be interesting to study if people who have a better tolerance of mess can actually handle higher level of cognitive complexity. Our experiment 3 showed some evidence in that direction by demonstrating that individuals with a liberal mindset are less susceptible to the effect of messiness. Future studies can examine other moderators of the effect of messiness on consumer behavior. Variables that related to susceptibility to contextual influence (field-dependency, self-monitoring) are likely to moderate the effect of messiness—that is, individuals who tend to be highly susceptible to contextual cues should show strong effects of messiness. Finally, we showed that consumers were willing to pay more for a t-shirt with a simple picture than a t-shirt with a complex picture, when the concept of messiness was activated. As the two t-shirts serve the same functional purpose, consumers' preference for simplicity is on an aesthetic level. Future research can study if messiness-induced inclination towards simplicity also occurs on a functional level. For instance, would consumers want to pay more for a microwave oven that possesses fewer or simpler functions than one with more or more complicated functions, even if more functions imply a higher price?

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TABLE 1
CUBICLES AND DIMENSIONS OF MESSINESS

	Messy cubicle	**Tidy cubicle**	**Control cubicle**
Messy	5.13 (1.30)	2.20 (1.21)	2.33 (1.05)
Disorganized	4.13 (1.64)	2.93 (1.28)	2.47 (0.99)
Dirty	3.47 (1.64)	3.00 (1.41)	2.53 (1.06)
Cluttered	3.73 (1.39)	3.67 (1.18)	3.00 (1.07)
Turbulent	2.87 (1.30)	2.80 (0.94)	2.73 (1.10)
Complex	3.47 (1.51)	3.27 (1.39)	2.60 (1.18)
Aversive	4.07 (1.39)	2.80 (1.15)	2.53 (1.06)

NOTE.—Standard deviations are in parentheses.

TABLE 2
RESULTS OF SIMPLE MEDIATION ANALYSIS IN EXPERIMENTS 1A, 1B, 1C AND 3

	B	*t*	*p* value
Experiment 1a			
Step 1: messiness prime predicting categorization scores	-0.57	$t(45) = -3.13$	$p < .01$
Step 2: messiness prime predicting need for simplicity	1.10	$t(45) = 2.73$	$p < .01$
Step 3: need for simplicity and	-0.21	$t(44) = -3.42$	$p < .01$
messiness prime predicting categorization scores	-0.34	$t(44) = -1.94$	$p = .059$
Experiment 1b			
Simple t-shirt			
Step 1: messiness prime predicting willingness to pay	5.36	$t(57) = 2.56$	$p < .01$
Step 2: messiness prime predicting need for simplicity	1.28	$t(57) = 3.98$	$p < .001$
Step 3: need for simplicity and	2.14	$t(56) = 2.64$	$p < .05$
messiness prime predicting willingness to pay	2.63	$t(56) = 1.17$	$p > .24$
Complex t-shirt			
Step 1: messiness prime predicting willingness to pay	-5.05	$t(57) = -3.03$	$p < .01$
Step 2: messiness prime predicting need for simplicity	1.28	$t(57) = 3.98$	$p < .001$
Step 3: need for simplicity and	-2.50	$t(56) = -4.28$	$p < .001$
messiness prime predicting willingness to pay	-1.82	$t(56) = -1.11$	$p > .27$
Experiment 1c			
Step 1: messiness prime predicting variety seeking	-1.07	$t(42) = -2.46$	$p <.05$
Step 2: messiness prime predicting need for simplicity	1.00	$t(42) = 2.33$	$p < .05$
Step 3: need for simplicity and	-0.44	$t(41) = -3.13$	$p < .01$
messiness prime predicting variety seeking	-0.62	$t(41) = -1.49$	$p > .14$
Experiment 3			
Step 1: messiness prime × dots condition predicting willingness to pay	-3.26	$t(82) = -2.50$	$p < .05$
Step 2: messiness prime × dots condition predicting need for simplicity	-0.34	$t(82) = -2.31$	$p < .01$
Step 3: need for simplicity and	4.98	$t(81) = 6.12$	$p < .001$
messiness prime × dots condition predicting willingness to pay	-1.57	$t(81) = -1.40$	$p > .16$
Experiment 4:			
Step 1: messiness prime × ideology predicting willingness to pay	3.44	$t(52) = 5.65$	$p < .001$
Step 2: messiness prime × ideology predicting need for simplicity	0.48	$t(52) = 3.83$	$p < .001$
Step 3: need for simplicity and	4.21	$t(51) = 5.20$	$p < .001$
messiness prime × ideology predicting willingness to pay	1.40	$t(51) = 1.68$	$p = . 099$

TABLE 3
EXPERIMENT 3 RESULTS: WILLINGNESS TO PAY AND NEED FOR SIMPLICITY AS A FUNCTION OF PRIME AND DOTS
NOTE.—Standard deviations are in parentheses.

	Willingness to Pay Index		**Need for Simplicity**	
	Messy	Tidy	Messy	Tidy
Simple dots	-2.00 (10.02)	-0.36 (7.02)	4.88 (1.21)	4.96 (0.94)
Neutral dots	9.33 (9.83)	-2.07 (10.43)	6.13 (1.25)	4.86 (1.17)
No dots	8.43 (10.23)	-1.21 (11.47)	5.99 (1.01)	4.71 (1.11)

FIGURE LEGENDS PAGE

FIGURE 1
EXPERIMENT 1B RESULTS: WILLINGNESS TO PAY FOR THE T-SHIRT AS A FUNCTION OF PRIME AND PRODUCT.

FIGURE 2
EXPERIMENT 3 RESULTS: WILLINGNESS-TO-PAY INDEX FOR THE T-SHIRTS AS A FUNCTION OF PRIME AND DOTS.

FIGURE 3
EXPERIMENT 4 RESULTS: WILLINGNESS-TO-PAY INDEX FOR THE T-SHIRTS AS A FUNCTION OF PRIME AND POLITICAL IDEOLOGY.

FIGURE 1
EXPERIMENT 1B RESULTS: WILLINGNESS TO PAY FOR THE T-SHIRT AS A FUNCTION OF PRIME AND PRODUCT

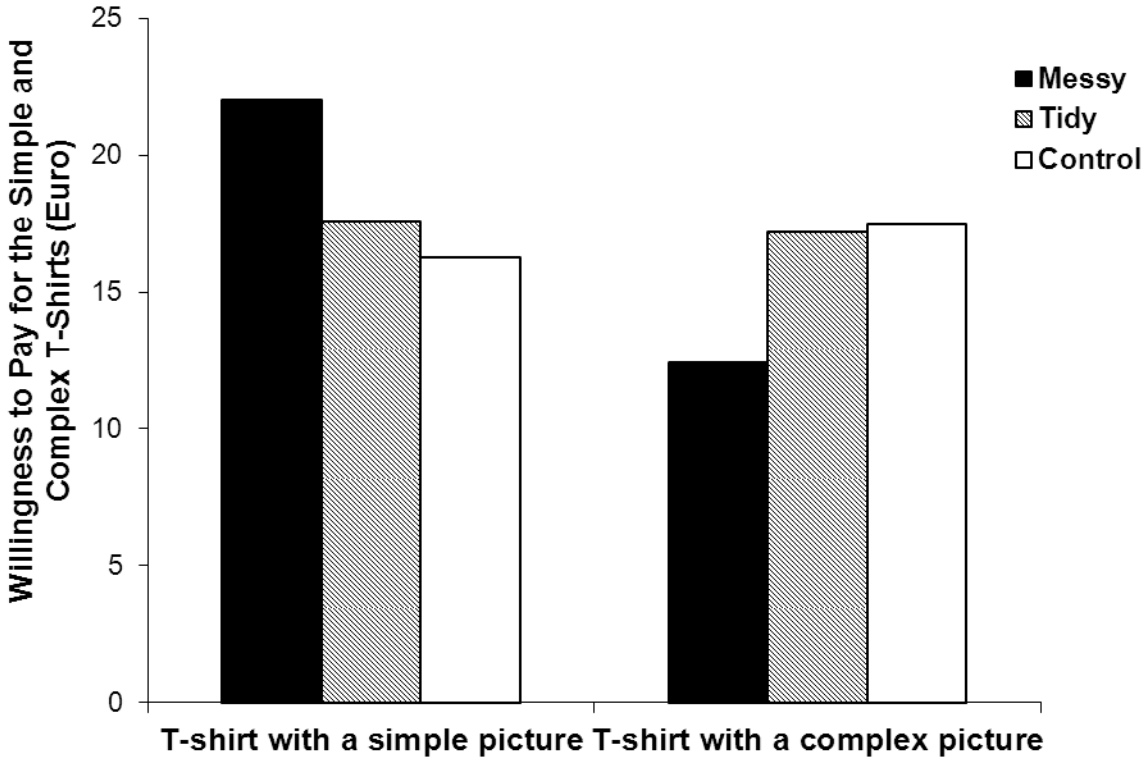


FIGURE 2
EXPERIMENT 3 RESULTS: WILLINGNESS-TO-PAY INDEX FOR THE T-SHIRTS AS A FUNCTION OF PRIME AND DOTS

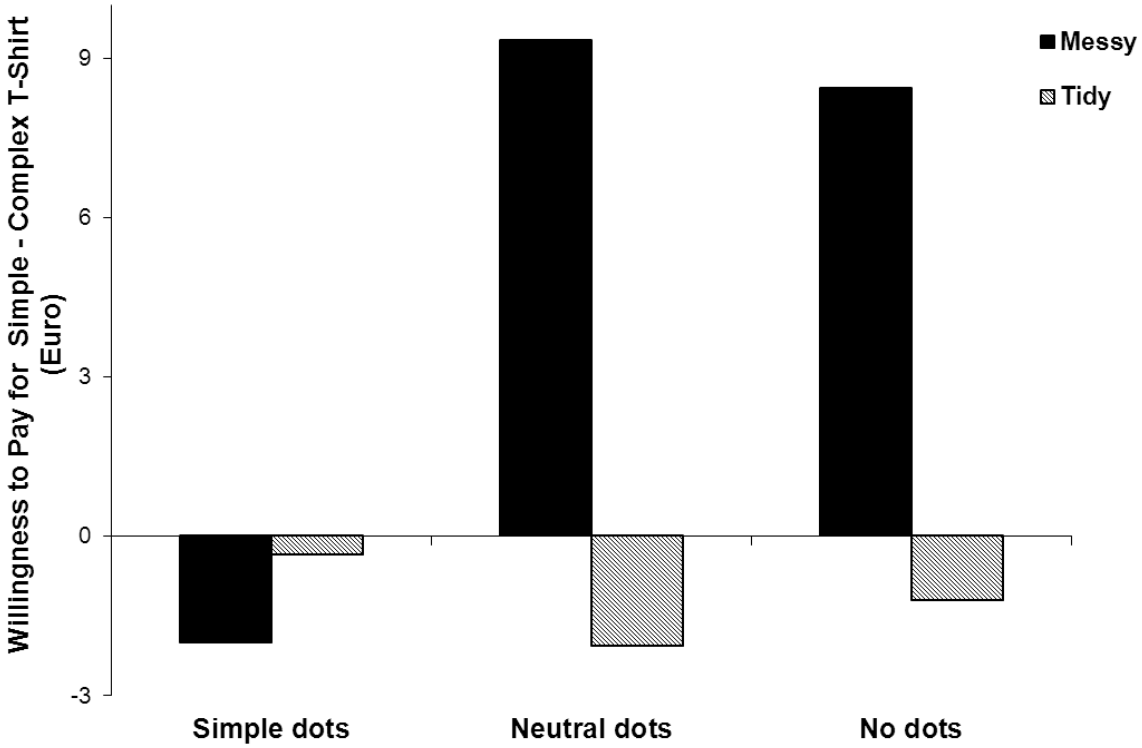
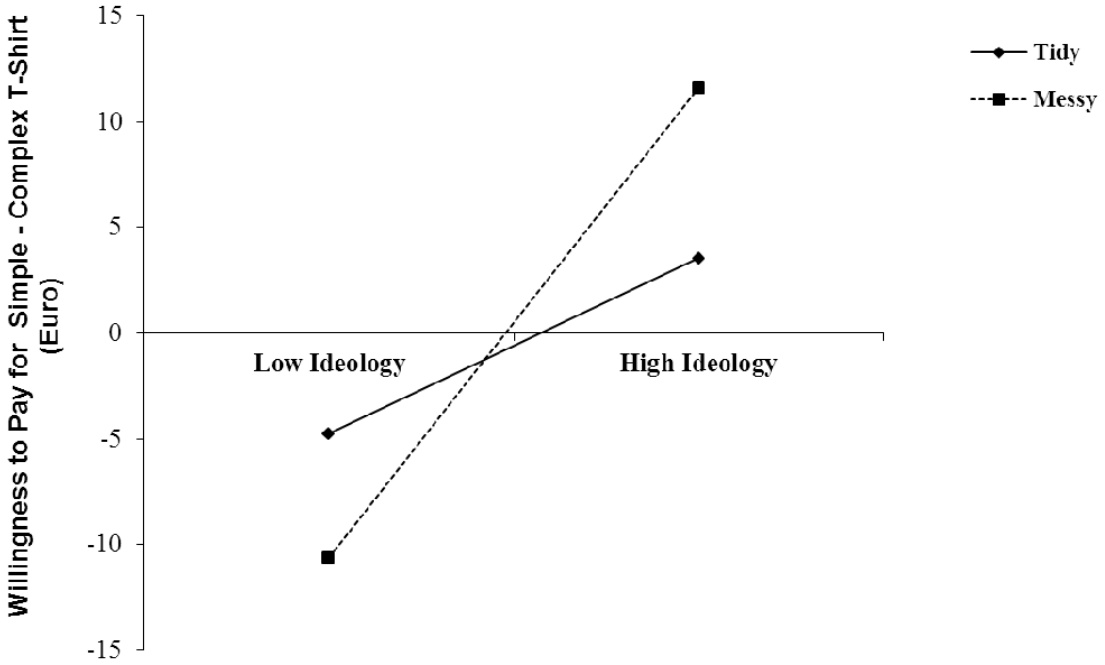


FIGURE 3
EXPERIMENT 4 RESULTS: WILLINGNESS-TO-PAY INDEX FOR THE T-SHIRTS AS A FUNCTION OF PRIME AND POLITICAL IDEOLOGY



APPENDIX A

PHOTOS OF MESSY, TIDY, AND CONTROL CARRELS IN EXPERIMENTS 1A AND 1C

Control Condition

Tidy Condition

Messy Condition

APPENDIX B

DUTCH WORDS (UNDERLINED) USED TO PRIME MESSINESS AND TIDINESS AND THE ENGLISH TRANSLATION IN EXPERIMENTS 1B, 3, AND 4

MESSINESS

huis, in, een, troep, op
mess

grote, straat, een, maken, puinhoop
mess (make a mess)

zeer, is, jarig, slordig, zij
sloppy (or untidy)

onordelijk, is, de, deur, kamer
unorderly

is, alles, een, warboel, grote
mix-up

elkaar, door, alles, ligt, trekt
disorganized

zijn, papieren, boek, de, ongeordend
unordered

wat, een, hier, chaos, daar
chaos

is, de, markt, tafel, vuil
dirty

zootje, een, over, ervan, maken
(make a) mess

bende, straks, is, een, het
mess

is, de, rommelig, openen, kamer
messy (disorder)

vol, huis, rent, rotzooi, ligt
mess

tafel, op, wanorde, de, vraag
disorder

hier, is, het, kam, onopgeruimd
untidy (or unorganized)

TIDINESS
er, uit, zien, gaan, keurig
neat

graag, schoon, kook, maak, ik
to clean

zijn, papieren, boek, de, geordend
ordered

zeer, is, jarig, ordelijk, zij
orderly

op, orde, alles, ligt, trekt
in order

opgeruimd, is, de, deur, kamer
tidy

is, de, markt, tafel, netjes
neatly

is, erg, je, zij, proper
tidy

voor, een, zorgen, structuur, over
organization (or structure)

mijn, zijn, verzorgd, haar, tanden
tidy

keuken, de, maken, koken, rein
make tidy

vlekkeloos, is, haar, opschrijven, bureau
immaculate

gekleed, schoen, is, onberispelijk, hij
impeccable

mooi, is, gerangschikt, alles, vraag

ordered

de, vogel, is, overzichtelijk, werkkamer
orderly

APPENDIX C

IMAGES OF THE T-SHIRTS WITH SIMPLE AND COMPLEX PICTURES USED IN EXPERIMENTS 1B, 3, AND 4

T-shirt with a simple picture

T-shirt with a complex picture

HEADINGS LIST

1) THEORETICAL BACKGROUND
1) EXPERIMENT 1A
2) Method
2) Results and Discussion
3) Manipulation check
3) Categorization
3) Need for simplicity
3) Mediation
3) Alternate explanations
1) EXPERIMENT 1B
2) Method
2) Results and Discussion
3) Willingness to pay
3) Need for simplicity
3) Mediation
3) Alternate explanations
1) EXPERIMENT 1C
2) Method
2) Results and Discussion
3) Manipulation check
3) Variety seeking
3) Need for simplicity
3) Mediation
3) Alternate explanations
1) EXPERIMENT 2
2) Method
2) Results and Discussion
3) Variety seeking
3) Need for simplicity
3) Mediation
3) Control variables
1) EXPERIMENT 3
2) Method
2) Results and Discussion
3) Willingness to pay
3) Need for simplicity
3) Mediation
1) EXPERIMENT 4
2) Method
2) Results and Discussion
3) Willingness to pay
3) Need for simplicity
3) Mediation