Keep It Simple? Consumer Perceptions of Brand Simplicity and Risk

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ABSTRACT

Evoking simplicity is a popular marketing strategy, but little is known about how consumers respond to it. The current work shows that simplicity has potential benefits and drawbacks. All else equal, when consumers think brands are simple, they deem them lower risk. Although these lower risk perceptions should be generally positive for brands, they can also lead consumers to punish simpler brands more in the event of failures. Experimental studies manipulate consumers’ brand simplicity perceptions, and simpler brands are judged less risky, controlling for potential confounds like premiumness, company size, liking, and professionalism. Consumers’ simplicity perceptions appear to be driven by perceptions of dimensionality, and preference for simplicity is mitigated when additional dimensionality is presented as risk-reducing redundancy, as well as when consumers have a taste-based (as opposed to quality-based) consumption goal. Finally, analysis of a proprietary customer satisfaction dataset from Consumer Reports (N = 147,600) provides real-world evidence that consumers penalize simple brands more than complex ones when problems occur.

Keywords: simplicity, failure, brands, risk
“Simple can be harder than complex.”
- Steve Jobs

Many marketers revere simplicity. It has been called “the most powerful branding principle” (Meyer 2012), and “the difference [between] an award-winning ad and an ad that brings in the results,” (Ahto 2015). Over the past decade marketing practitioners have made branding visually and conceptually simpler, and evoking the idea of simplicity in marketing communications, either implicitly or explicitly, has become an increasingly common strategy. For example, direct-to-consumer mattress brand Casper gained many enthusiastic customers and dozens of copycats with its sparse illustrated ads, website with minimal options, and crisp striped boxes (Dolan 2017; Griffith 2017). Xfinity runs TV ads ending with the tagline, “Simple. Easy. Awesome.” Simplisafe is the name of a leading home security brand. The renowned design firm IDEO “seeks simplicity in product and brand design to the nth degree” (personal communication: B. Crosier, October 24, 2018). Many marketing practitioners also believe that consumers like simple-seeming brands; Branding agency Siegel+Gale has published a Global Brand Simplicity Index of the world’s simplest brands annually since 2009, arguing that simpler brands perform better financially, gain more trust, and inspire more customer loyalty (Belk and Rafferty 2012; Siegel+Gale 2021).

Despite the increasing importance of simplicity as a branding principle for practitioners, the critical role that brands play in marketing, and the extensive academic literature on brand perceptions, it is not well understood how consumers’ perceptions of the simplicity or complexity of brands influences downstream outcomes for consumers and firms. In this work we
examine one possibility: the relationship between consumer perceptions of simplicity and judged risk of product or service failures. We propose that when consumers associate brands with simplicity, they judge them to be lower risk.

The current work makes two main contributions. First, we conduct experimental studies to probe the effects of perceived brand simplicity on consumers’ perceptions of product and service risk. We find that simplicity has both potential benefits and dangers, and is thus not uniformly good. All else equal, consumers believe simpler brands are less risky, which is positive in search and choice, but can backfire in the event of a product or service failure. Second, through analyses of secondary data, we find that consumers penalize simple-seeming brands more than complex ones when problems occur. We were given access to a proprietary consumer survey dataset from Consumer Reports, containing approximately 150,000 observations of consumer evaluations of products across four product categories. Consumers in the dataset reported an overall evaluation of the product as well as the number of problems they encountered with them. We supplemented these data with simplicity scores for each brand, which we elicited in a separate survey. Supporting the laboratory results and our theorizing, we find that the negative effect of experienced problems on consumer evaluations is larger for brands perceived to be simpler. We also replicate these effects in a subsequent online experiment and test additional behavioral implications.

**BRAND SIMPLICITY PERCEPTIONS AND THEIR CONSEQUENCES**

Given the importance of simplicity to marketing practitioners it is surprising that there is little research on consumer perceptions of the simplicity or complexity of brands in the academic literature. One reason for this may be that the idea of brand simplicity does not naturally fit into
the most influential frameworks that treat brands as possessing human characteristics, or consumer-brand interaction as analogous to human relationships (Aaker 1997; Aaker, Fournier, and Brasel 2004; Fournier 1998). Our conceptualization is more consistent with the role of brand associations in Keller’s customer-based model of brand equity (Keller 1993, 2012). Thus, we conceptualize brand simplicity perceptions as a consumer’s overall gestalt feeling of simplicity associated with a brand, formed in part by marketing communications. Of course simplicity is just one association consumers can make and hold in memory when evaluating brands, but for the reasons outlined above, judgments of simplicity and complexity are becoming more common than in the past.

Why might evoking simplicity in marketing be a good idea? One of the strongest arguments in favor of this strategy is that people generally like simpler things. Research from cognitive psychology has shown that humans seek the simplest representations and briefest explanations of incoming information that still allow them to make sense of the world. This fundamental sense-making behavior manifests itself in a general preference for simple things (Chater 1999; Chater and Loewenstein 2016; Chater and Vitányi 2003; Hahn, Chater, and Richardson 2003). Several findings from the marketing literature support this insight. Consumers prefer ads that are lower in visual complexity (Pieters, Wedel, and Batra 2010). Difficulty in comprehension (driven by complexity) is a barrier to new product adoption, and consumers downgrade products they feel they do not understand well (Jhang, Grant, and Campbell 2012; Rogers 2003). Retail investors have also been shown to judge investments they think they understand better as less risky, which is harmful to their returns (Long, Fernbach, and de Langhe, 2019). Barwise and Meehan (2004) have argued that marketers are often too caught up with the
idea of differentiation because consumers care little for unique value propositions; instead they prefer products that consistently deliver the fundamentals of whatever they are supposed to deliver. Most consumers also prefer using simpler products (Eytam, Tractinsky, and Lowengart 2017) and prefer simpler explanations of new products (Fernbach, Sloman, et al. 2013).

However, several findings from both psychology and marketing suggest a more nuanced picture, with complexity being preferred in some contexts. Berlyne (1958) hypothesized that when people see a more complex, novel, or irregular object they become aroused and attempt to reduce arousal by exploring the object. Relatedly, evaluations of complex ads become more positive with additional exposures, while evaluations of simple ads do not (Cox and Cox 1988). There is also evidence that consumers prefer more complexity in products when it is framed in terms of additional features. When evaluating and choosing products, consumers have been shown to value features more than usability before making a purchase, which can result in choosing complex products that are hard to use once purchased, which makes them unhappy (Thompson, Hamilton, and Rust 2005). Sometimes people even overcomplicate an unexpectedly easy decision in order to match actual with expected effort (Schrift, Netzer, and Kivetz, 2011).

Though we believe brand simplicity perceptions could be associated with liking (and explore this in several studies), the focus of the current work is on the relationship between simplicity and risk judgments. Specifically, our main prediction is that consumers think simpler brands are less likely to have product and service failures. If true, this is seemingly another reason to evoke simplicity in marketing. Prior research has shown that lower risk perceptions positively influence consumers’ purchase intentions, choice, willingness to pay, and more (Bettman 1973; Dowling 1986; Mitchell 1999).
Risk has been defined in multiple ways across different literatures. One tradition has attempted to pinpoint the qualitative features of events that make them feel risky (Fischhoff et al. 1978; Slovic 1987). Slovic (1987) categorized risks into two dimensions: “unknown risk” and “dread risk.” Unknown risk is defined in terms of unknowable hazards, while dread risk is characterized by a fear of negative consequences and perceptions of a high likelihood of loss. A different approach has defined risk perceptions in terms of summary statistics of outcome distributions, like mean and variance (March and Shapira 1987; Weber, Shafir, and Blais 2004). Perceptions of risk are higher both when variance is higher and when mean is lower. An investment opportunity is judged risky, for instance, when the distribution of possible outcomes is dispersed and when the probability of losing money is relatively high. In the current research we operationalize risk judgments more in line with the qualitative tradition, opting for an elicitation that blends dread and unknown risk.

Although much has been made of the benefits of lower risk perceptions, they may backfire. According to the expectation-confirmation theory of consumer satisfaction, consumer evaluations of an experience depend both on the quality of the experience itself and the gap between the experience and the consumer’s expectation prior to the experience (Oliver 1980). Thus, an equally poor experience will yield more dissatisfaction if expectations are higher a priori. This has been confirmed in numerous marketing studies (e.g., Diehl and Poynor 2010; Oliver 1993; Spreng, MacKenzie, and Olshavsky 1996; Swan and Trawick 1981). We suggest that brand simplicity establishes an expectation of minimal product/service failure risk and that simplicity as a marketing strategy can therefore create the conditions for increased consumer
dissatisfaction when something goes wrong. We test this possibility in the second half of the paper.

A remaining question is why consumers might think products from simpler brands are less likely to have issues. A recurring theme in research mentioning complexity is that it is often described in terms of more—more images, information, parts, labels, or options (Conway et al. 2008; Dellaert and Stremersch 2005; Linville 1982; Pacer and Lombrozo 2017). Research on cognitive complexity has operationalized the construct as the number of non-redundant dimensions in an individual’s mental representation of an object or person (Linville 1979, 1982, 1987; Scott 1962). We hypothesize that consumers’ perceptions of simplicity and complexity of brands are reflections of their mental models of dimensionality, which discounts redundancy. In other words, adding more unique things increases perceptions of complexity more than adding more things in general. We acknowledge that simplicity and complexity may mean more than just dimensionality to consumers, but we theorize that it is a major contributing factor to their linking simplicity and risk judgments. With the construct operationalized in this way (as additional dimensionality), the link in consumers’ minds between simplicity and risk makes some sense. If a system is more complex it has more potential points of failure and it would be reasonable to infer greater risk. Research on subjective probability judgments has shown that different descriptions of the same event can lead to different probability judgments, and a specific event (e.g., car crashes caused by brake failure) can seem more likely than a more inclusive event (e.g., car crashes caused by car component failure), because explicitly mentioning a possibility tends to increase its salience and thus its perceived likelihood (Rottenstreich and Tversky 1997; Tversky and Koehler 1994). Related research in marketing has
shown that the ease with which consumers bring exemplars of an event to mind influences judgments about the likelihood of products failing (Folkes 1988), and consumers report higher probability judgments of future failures when they mentally unpack potential reasons for failures, compared to consumers who do not undertake an unpacking task (Biswas, Keller, and Burman 2012). People also tend to underestimate complexity in general, believing things to be simpler than they are (until they are asked to explain them; Fernbach, Rogers, et al. 2013; Rozenblit and Keil 2002), suggesting that they underestimate potential sources of failure a priori. With this in mind we theorize that marketing evoking simplicity has the potential to reinforce these tendencies; if consumers think a brand is simpler (and thus has fewer dimensions), they are likely to envision fewer instances of product/service failures and report less risk.

To summarize, we argue that consumer perceptions of brand simplicity may act as a perceived promise to consumers that risk is low. This could be beneficial if lower risk perceptions are positive for consideration and choice. However, there is a danger if simplicity perceptions create unrealistic expectations. Some marketers may not intend for simple marketing to be a promise. They may choose simple marketing because it is fashionable or because they are focused on liking and trial, without thinking about potential dangers later in the customer lifecycle.

We conducted a survey of marketing practitioners (N = 24) from two marketing agencies and one in-house team to gain insight into real marketers’ intuitions regarding the benefits and risks of simplicity in marketing (see OSF repository for materials). Results revealed that practitioners think consumers view simpler brands as less risky than complex ones ($p < .001$) and believe consumers like simpler brands more ($p < .001$). However, in spite of being prompted to
consider consumers’ risk perceptions by the previous question in the survey, not one practitioner
mentioned increased consumer dissatisfaction after failures in their responses to an open-ended
question asking them to list “any possible downsides to suggesting or projecting simplicity as a
marketing strategy.” Thus, the current work’s predictions have important, novel, and non-
obvious implications for marketers and consumers alike.

SUMMARY OF STUDIES

Eight experiments and one study analyzing secondary data test the relationships between
consumers’ perceptions of brand simplicity and risk of failures. First, based on assessments of
real brands’ websites and advertisements, consumers believe simpler brands are less risky than
more complex ones, controlling for how premium the brands are perceived to be and how much
consumers like them (study 1). These effects replicate when perceived simplicity is manipulated
by altering the visual appearance of advertisements for fictitious brands, and when controlling
for the additional confounds of perceived professionalism, luxury, and size of the company
(study 2). They also replicate when the relative simplicity of a focal brand is manipulated by
contrasting it with either a visually simpler or more complex competitor brand’s marketing
image (study 3). Probing potential mechanisms, study 4 provides evidence that perceived brand
dimensionality mediates the relationship between perceived simplicity and risk, and rules out
fluency as an alternative explanation. Study 5 and study 6 provide additional conceptual clarity
by demonstrating boundary conditions for the main pattern of effects. In study 5 consumers do
not judge more complexity as higher risk when additional brand dimensionality is presented as
adding redundancy. Study 5 also uses a marketplace proxy measure for risk perceptions:
consumers’ interest in reading a product’s return policy. In study 6 results from a choice scenario
show that a taste-based consumption goal mitigates consumer preference for simpler brands, compared to a quality-based consumption goal. In study 7, we use proprietary Consumer Reports customer survey data on product reliability and satisfaction to test an important downstream consequence of brand simplicity perceptions: Do consumers penalize simpler brands more for product and service failures? Finally, in study 8 we replicate these effects and separately test each of the paper’s main predictions in a controlled experiment. Materials for all studies and pre-tests are available at an OSF repository (https://bit.ly/3CV2hqb) and supplemental analyses appear in the web appendix.

**STUDY 1: EFFECTS OF SIMPLICITY PERCEPTIONS ON RISK JUDGMENTS**

We predicted that, ceteris paribus, perceptions of brand simplicity decrease perceptions of product or service failure risk. In study 1 we tested this prediction using stimuli from real brands from a pre-test that measured consumers’ perceptions of the simplicity of 40 brands. We ran the pre-test (N = 513) in order to obtain brand simplicity scores and to learn several potential methods for manipulating brand simplicity perceptions in subsequent studies. Participants in the pre-test viewed their assigned brand’s webpage and print/billboard ads, before answering several agree-disagree items potentially related to simplicity perceptions (e.g., “Visually, the [brand] website is sparse/uncluttered”, “The words on [brand]’s ads are easy to understand”) and three items intended to capture perceptions of the overall simplicity of the brand (e.g., “[Brand] has an aura of simplicity”). We averaged these three overall simplicity measures across participants for each brand, which allowed us to select brands to use in study 1 (see OSF repository for materials and web appendix for brand simplicity scores).
In study 1 we chose a subset of the brands from the pre-test that differed in judged simplicity, had participants view their websites and visual advertisements, and judge risk and liking. We predicted that the simple brands would be deemed lower risk. Manipulation of perceived brand simplicity was accomplished via stimulus selection. We considered two plausible alternative explanations for an association between perceived simplicity and risk. First, participants may see simpler brands as more premium and more premium brands as lower risk. Second, it could be the case that risk judgments do not depend on simplicity per se, but instead are fully mediated by liking. That is, participants may like simpler brands better and deem things they like to be lower risk. If this were true, it would mean that anything that increases liking should decrease risk, without a theoretically interesting place for simplicity. To test these alternatives, we included a measure of brand premiumness and controlled both for it and for liking when assessing the effect of simplicity on risk.

Method

204 Amazon Mechanical Turk participants completed a Qualtrics survey via Cloud Research for $2.00. Data from 11 participants who admitted not viewing study stimuli and three participants who took less than five minutes to complete the survey were deleted from the data set before analysis began, resulting in 190 complete responses.¹

Study 1 used a within-subjects design. We took pairs of brands—the simplest and the most complex from four of the eight product categories in the pre-test, based on average

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¹ The mean completion time for the remaining 190 participants was 21 minutes, 20 seconds. Participants could not, in good faith, complete the survey in less than five minutes because they were instructed to visit the websites of 8 brands, spend several minutes on each, view multiple advertisements by those brands, and answer more than 50 questions in total. For robustness checks without these exclusions, see appendix.
simplicity judgments. The brands were Sleep Number and Casper (mattresses), Aetna and Oscar (insurance), Charles Schwab and SoFi (financial services), and OGX and Suave (hair products). All participants viewed the websites and advertisements of all eight brands, with order of website or ads first counterbalanced, which were identical to the pre-study stimuli for those brands. This represented our manipulation of brand simplicity by stimulus selection. After viewing the website and advertisements of a brand, participants then answered four questions which were presented in randomized order. The questions measured liking (“How much do you like the company [brand]?”), “Do not like at all” to “Like very much”), simplicity (“In your opinion, how simple or complex is the company [brand]?”), “Extremely simple” to “Extremely complex”), premiumness (“Please rate how much you agree disagree with the following statement: I think of [brand] as a high-end brand”, “Strongly disagree” to “Strongly agree”), and perceived risk (“Extremely low risk” to “Extremely high risk”) in response to the following statement:

“When buying something or interacting with a company, sometimes consumers experience issues that they didn't expect. These issues include anything that would cause a consumer to return something, post a negative review, or contact customer service for any reason. In your opinion, what is the risk of this kind of issue happening with [brand]?”

Participants then answered a question asking them if they actually viewed all eight of the brands’ websites or if they skipped one or more, and reported age, gender, and income.

Results and Discussion

We first checked for meaningful differences in perceived simplicity between the simple and complex brands in each product category. We tested if the average within-subject difference between the simple and complex brands was significantly different from zero. Replicating the
perceived differences from the pre-test, the simple brands were rated as simpler than the complex brands in each product category (all \(ps < .001\)).

The predicted effect of simplicity on perceived risk was confirmed. The average difference in risk between simple and complex brands was .18 (on a 7-point scale). To test if this difference was statistically significant, we ran a linear mixed-effects model with a within-subject risk difference score (complex minus simple) as the dependent variable. Because this measure represents each participant’s difference in perceived risk between the complex and simple brand within each category, the model intercept represents the effect of the simplicity manipulation on perceived risk. The model also included zero-centered difference score variables to control for the effects of brand liking and perceived premiumness, as well as mean-centered participant demographic variables (age, gender, and income) and random intercepts for product category and participant. The intercept was positive and significant indicating that participants believed simpler companies to be lower risk (simplicity coded with higher numbers indicating more complexity; \(\beta_0 = .36, t(5.56) = 5.60, p = .002, 6.0\% \text{ of range}^2\)).

We also examined the effect of perceived simplicity on liking judgments. We ran a model with the same demographic controls and random intercepts predicting within-subject differences in brand liking. The model revealed a positive intercept which was not statistically different from zero \( (\beta_0 = .11, t(3.23) = .54, p = .63, 2.2\% \text{ of range}) \). Across eight brands from four product

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2 There is significant debate regarding the appropriateness of standardized effect size statistics in linear mixed-effects models. Therefore, because we use many linear mixed-effects models in this paper, we report instead an easily interpretable statistic representing a parameter’s effect in terms of percent change in the dependent variable’s scale range. For example, a coefficient (or slope) of 1 on an eight-point DV range would be reported here as “14.3% of range.”
categories, participants demonstrated that they believe that simpler brands are lower risk than complex brands, after controlling for liking and perceived premiumness. There was no significant effect of simplicity on liking.

**STUDIES 2A AND 2B: MANIPULATING SIMPLICITY PERCEPTIONS**

Although study 1 has good external validity because we use real brands and have participants interact with real ads and websites, one potential criticism is that simpler branding could reflect brands that are actually simpler, in which case consumers could be correct to predict lower risk. Study 1 also has weaker internal validity because the manipulation is based on stimulus selection, with extraneous variables differing between brands within a given category. We designed study 2 to address these concerns by showing that merely the visual appearance of a marketing image can make consumers feel that there is a difference in risk between simpler and complex brands, even if other important factors about the brands are held constant. We tried to alleviate concerns about confounding factors in study 1 by controlling for perceived premiumness and liking, but it is possible our measures do not perfectly control for the confounded constructs, and there may be other confounds that we did not think of. In order to address these concerns in study 2 we manipulated perceived brand simplicity by varying the visual simplicity/complexity of advertisements. We chose this manipulation to both maximize internal validity (since it is straightforward to manipulate visuals of an ad without changing other characteristics) and because visual elements are important tools at the disposal of marketing practitioners seeking to influence consumers’ judgments of brands. We also strengthen the interpretation of our risk results by including additional control measures for perceived company size, luxury, professionalism, and liking, and re-test the simplicity-liking relationship in a more
internally valid experiment. What follows is a full discussion of study 2a, with differences and motivations for running study 2b in the Results and Discussion section below.

Method

617 Amazon Mechanical Turk participants completed a Qualtrics survey via Cloud Research for $.80. Like study 1, study 2a used pairs of brands, but this time in five product categories: software development, financial services, bicycles, food, and apparel. Each participant was randomly assigned to view only one of the five categories, and each category included two fictional brands, one with a simple marketing image and one with a complex one.

The images were manipulated in line with findings from visual complexity research by Pieters et al. (2010); complexity was increased by including additional images, edges, textures, colors, and copy, and reducing empty space. The simple stimulus in each category was black and white only, and included a stylized hourglass graphic, the company name, and three category-specific words, as well as a large amount of white space, reflecting takeaways from the pre-test about visual sparseness. Across product categories, the images and company names were the same within simplicity levels, but the copy on the stimuli was changed to reflect the appropriate category. For example, the simple apparel company condition copy read, “Streetwear. Workwear. Simplicity,” while the simple financial services condition copy read, “Investing. Planning. Simplicity,” even though both brands used the same visuals and names. As mentioned in the introduction, using the term “simple” or “simplicity” is a common tactic when attempting to project simplicity, so we added Simplicity as the third word for all companies in the simple condition in order to strengthen this study’s external validity. It is also important to note that because this is a within-subjects experiment, the simple and complex companies had to have
different names and copy. Examples of simple and complex stimuli are shown in figure 1, and all stimuli can be found in the OSF repository.

We are ultimately interested in participants’ subjective perceptions of simplicity. However, because all stimulus images used in the experiment were the same height, width, and file format, objective visual complexity of the stimuli could be assessed by the size of each image file (for an excellent discussion of image compression, visual complexity, and file size, see Pieters et al. 2010). Across the five categories, the average file size of the complex condition stimuli ($M_{\text{Complex}} = 372.92$ kilobytes) was significantly larger than that of the simple condition stimuli ($M_{\text{Simple}} = 30.97$ kilobytes, $p < .001$).

**FIGURE 1: STUDY 2A EXAMPLE STIMULI FOR SIMPLE AND COMPLEX BRAND CONDITIONS**

After being randomly assigned to a category, participants were then randomly assigned to one of two presentation order conditions (simple first or complex first). They viewed either the simple or complex marketing stimulus in their assigned category, evaluated the perceived simplicity of the company (using the same measure as in study 1), then answered four questions about potential confounding factors in random order. The first was size of the company (“In your opinion, how small or large is this company?”), measured on a six-point “Very small” to “Very
large” scale. The second was luxury (“Please rate how much you agree/disagree with the following statement: I think of this company as a luxury company.”), measured on a six-point scale from “Strongly disagree” to “Strongly agree.” The third was professionalism (“In your opinion, how professional is this company?”), measured on a six-point “Not professional at all” to “Very professional” scale. The fourth was liking, measured on a six-point “Do not like at all” to “Like very much” scale. Participants then viewed the equivalent stimulus and answered questions for the other brand / level of simplicity in their assigned category. Participants were then shown both stimuli again and were asked to evaluate whether consumers of company A or company B (simple-complex counterbalanced across conditions) would be more likely to experience unexpected product or service issues. The wording of the first half of this risk measure was the same as in study 1, but the second half read, “Based on what you know, are consumers of Company A or Company B more likely to experience these kinds of issues?” The key difference in this risk dependent variable compared to study 1 was that it was a direct-comparison six-point measure from “Consumers of Company A much more likely to experience issues” to “Consumers of Company B much more likely to experience issues.” Lastly, participants answered the same demographic questions from study 1 before ending the experiment.

Results and Discussion

The simplicity manipulation was successful: the average within-subject difference in perceived simplicity between the simple and complex stimuli across the five product categories was 2.18 on an eight-point scale ($t(616) = 27.88, p < .001, 31.1\%$ of range), and was significant for all five categories individually (all $ps < .001$). To test the risk prediction, we used a linear
mixed-effects model with random intercepts by category, four within-subject difference-score control variables (complex minus simple) for perceived size, luxury, professionalism, and liking, as well as a contrast-coded presentation order control variable, to test the effect of manipulated simplicity on perceived risk of unexpected issues. Because the dependent measure in the experiment was a single bipolar item, we zero-centered it at the midpoint of the scale. This allows us to easily interpret and test the significance of the model intercept, with positive intercept values indicating perceptions of more risk for the complex company, and negative indicating more risk for the simple company. As predicted, consumers judged the simpler brands to be less risky than the complex brands, over and above the effects of perceived differences in liking, luxury, professionalism, and size ($\beta_0 = .21, t(608) = 3.09, p = .002, 4.2\%$ of range).

We ran nine versions of the main model, first as a simple OLS test of the intercept, (model 1), then as linear mixed effects models with random intercepts by category, adding in a contrast-coded variable for presentation order (model 2), then with each control difference-score variable individually (models 3-6), then with all four difference-score variables together (model 7), with difference-score and order variables (model 8), and with all previous variables plus gender, education, age, and income (model 9). Because we are testing the intercept in each model (which is meaningful only when all other independent variables have a value of zero), all difference-score and contrast-coded variables were zero-centered, and age, income, and variables were mean-centered at zero. The intercept in model 9, for example, can be interpreted as the perceived difference in risk between the complex and simple brands for participants at the average age, income, education, and across genders, for whom there is no difference in perceived company size, premiumness, professionalism, or liking. See table 1 below for regression
coefficients for all nine models. The value of the intercept is positive and significant, indicating less perceived risk for the simpler brands. The intercept fails to reach statistical significance in only one model, model 6, which includes liking as the only independent variable other than the intercept itself ($\beta_0 = .08, t(612) = 1.49, p = .14, 1.6\%$ of range).

Study 2a also provides support for the association between simplicity on liking: the within-subject difference in liking between the complex and simple brands indicated more liking for the simpler brands (average within-subject difference on the six-point measure = .35, $t(613) = 6.50, p < .001, 7.0\%$ of range).

**TABLE 1: REGRESSION COEFFICIENTS FOR ALL STUDY 2A MODELS TESTING THE EFFECT OF SIMPLICITY ON RISK**

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<th><strong>OLS (model 1)</strong></th>
<th><strong>Linear mixed-effects (models 2-9)</strong></th>
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<tbody>
<tr>
<td><strong>Dependent variable:</strong></td>
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<td></td>
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<tr>
<td>Risk comparison (midpoint-centered)</td>
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<tr>
<td>Intercept</td>
<td><strong>.24</strong></td>
<td><strong>.24</strong></td>
</tr>
<tr>
<td>Presentation Order</td>
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<td>.14</td>
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<tr>
<td>Prof.diff</td>
<td>-.43***</td>
<td>-.22***</td>
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<tr>
<td>Size.diff</td>
<td>-.26***</td>
<td>-.10*</td>
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<td>Lux.diff</td>
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<td>Income</td>
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*Notes:* *p<.05, **p<.01, ***p<.001, dfs and ps estimated w/ Satterthwaite’s method for models 2-9. Simplicity coded with higher values indicating more complexity.
Study 2a replicates the pattern of risk results from study 1 using a visual manipulation of brand simplicity, providing additional support for the predicted effect after controlling for multiple potential confounding factors. However, the design of study 2a could have introduced other potential confounds. Specifically, the slogans and names used in the stimuli could have generated differential levels of feelings of risk, especially since the complex condition brand name was Float. The same could be said for the images themselves, one of which showed workers climbing on scaffolding. To address these concerns, we ran study 2b.

_pre-test, Method, Results, and Discussion_

Before launching study 2b, we conducted a pre-test (N = 201 participants via Prolific Academic) to test potential new brand names and slogans in terms of perceptions of risk. The names were Sketch and Monarch, and the only change to the slogans from study 2a was that the term Simplicity in the simple condition was replaced with the company name, Sketch. For example, the new slogan in the financial category for the simple brand was “Investing. Planning. Sketch.” Participants were not shown any images, and were asked to evaluate product failure risk on the same direct comparison measure from study 2a (one item for names and one for slogans), but with the added instructions to base their evaluations solely on the names and slogans (respectively). The pre-test revealed that Sketch was perceived to be slightly more associated with product risk than Monarch (difference in means = .19, \( t(200) = 1.50, p = .14 \)), and the simple brand slogan significantly riskier than the complex one (difference in means = .60, \( t(200) = 4.53, p < .001 \); see OSF repository for materials and analyses). As a result, we launched study 2b with the riskier names and slogans used in the simple brand condition. Theoretically this would work against the finding of the simple brand being perceived as less risky, so if the pattern
of findings replicates in study 2b, we believe this finding would strengthen our interpretation of the results.

Study 2b (N = 610 participants from Amazon Mechanical Turk via Cloud Research) used the same paradigm as study 2a. The only differences were the changes to the names, slogans, and images in the stimuli. The scaffolding background image from study 2a was replaced here with an abstract background of crisscrossing lines and hexagons. The pattern of results in study 2b were nearly identical to those in study 2a. Participants again judged the simpler brands to be less risky, over and above the effects of perceived differences in liking, luxury, professionalism, and size ($\beta_0 = .21, t(600) = 4.25, p < .001, 4.2\%$ of range). Study 2b also replicated study 2a’s findings on the effect of simplicity on liking, with participants indicating more liking for the simpler brands (average within-subject difference on the six-point measure = .38, $t(604) = 7.18, p < .001, 7.6\%$ of range).

**STUDY 3: BETWEEN-SUBJECTS CONTRAST EFFECTS**

Studies 2a and 2b show a nearly identical pattern of results, which provide further support for the predicted relationship between perceived simplicity and risk. However, both studies were within-subjects experiments in which brand was confounded with simplicity level. For this reason, study 3 tests the simplicity-risk relationship in a between-subjects experiment.

**Method**

Study 3 design and analyses were pre-registered on AsPredicted.org (see OSF repository for pre-registration protocol). 604 participants were recruited from Amazon Mechanical Turk via Cloud Research and completed a Qualtrics survey in exchange for $.40. They were assigned to one of two between-subjects conditions. In one condition, the focal brand, a fictional apparel
company, was made to seem simple by comparison. In the other, the same focal brand was made to seem complex by comparison. In each condition the same marketing image from the focal brand was presented next to either a very visually simple or complex fictional competitor brand’s marketing image (see OSF repository for stimuli). The manipulation of perceived simplicity was thus achieved via contrast effect.

Participants then proceeded to the three main variables of interest, reporting perceived simplicity, risk of failures, and liking for both the focal and competitor brand in their assigned condition. The items were similar but not identical to those in studies 2a and 2b. The simplicity items asked, “In your opinion, based on the marketing images above, how simple or complex are the two companies?” (matrix, 8-point scales from “Extremely simple” to “Extremely complex”). The first part of the risk items was the same as those in studies 2a and 2b, but then asked, “Based on the marketing images above, how likely are consumers of each of the two companies to experience these kinds of issues?” (matrix, 8-point scales from “Extremely likely” to “Extremely unlikely”). The liking items asked, “In your opinion, based on the marketing images above, how much do you like the two companies?” (matrix, 6-point scales from “Do not like at all” to “Like very much”). As with the previous studies, participants finished the survey by answering age, education, and gender questions.

Results and Discussion

Because participants in both conditions viewed and evaluated the identical image from the same focal brand (with only its competitor brand varying between them), we tested for between-condition differences in perceived simplicity, risk, and liking for the focal brand. The contrast-effect simplicity manipulation was successful: when paired with a competitor brand’s
visually complex marketing image, the focal brand seemed simpler than when paired with a visually simple competitor ($M_{\text{simple-by-comparison}} = 3.12$, $M_{\text{complex-by-comparison}} = 4.37$, $t(602) = 11.77$, $p < .001$, 17.9% of range; lower values indicate more simplicity). As hypothesized, these differences also extended to participants’ perceptions of the risk of unexpected issues, with participants rating the focal brand as less risky when it seemed simpler ($M_{\text{simple-by-comparison}} = 4.15$, $M_{\text{complex-by-comparison}} = 4.46$, $t(602) = 2.83$, $p = .005$, 4.4% of range; lower values indicate less risk). Finally, replicating studies 2a and 2b, participants in the simple-by-comparison condition reported more liking for the focal brand than those in the complex-by-comparison condition ($M_{\text{simple-by-comparison}} = 3.62$, $M_{\text{complex-by-comparison}} = 3.06$, $t(602) = 5.32$, $p < .001$, 11.2% of range; higher values indicate more liking). Importantly, in a model predicting risk with condition and a control variable for liking, the complex condition was still perceived to be significantly riskier than the simple condition ($t(601) = 2.38$, $p = .02$).

Study 3 provides additional support for the hypothesized effects of perceived brand simplicity on perceived risk of failures in a between-subjects experiment with good internal validity. When the same focal brand seemed simpler to participants, they rated its customers as less likely to experience unexpected issues, compared to when it seemed more complex. Study 3 also provided support for the practitioner assumption that simpler brands are better liked than complex ones, given that the focal brand was liked more in the condition where it appeared to be simpler.

**STUDY 4: DIMENSIONALITY AS A DRIVER OF SIMPLICITY-RISK PERCEPTIONS**

Results from the previous studies suggest that the relationship between consumer perceptions of brand simplicity and the risk of product failures is fairly robust. However, these
studies did not explore potential mechanisms for the relationship. We therefore designed study 4 to test our prediction that consumers’ perceptions of brand dimensionality mediate the relationship between perceived simplicity and risk. Another goal of study 4 is to rule out fluency as an alternative mechanism. Fluency, the metacognitive feeling of ease when processing information, has been shown to drive preferences across numerous contexts, with more fluent objects or information preferred to less fluent ones (Alter and Oppenheimer 2006, 2008, 2009). Separate fluency research documented a phenomenon in which lay investors choose investments that are more fluent because they are perceived to be less risky (Cornil, Hardisty, and Bart, 2019). It is plausible, then, that the brands consumers think are simpler are those that are more fluent to evaluate, and that feelings of fluency could spill over to judgments of risk. If true, the relationship between simplicity perceptions and risk judgments should change based on the fluency or disfluency of the scenario in which brands are presented.

Method

Study 4 design and analyses were pre-registered on AsPredicted.org (see OSF repository for pre-registration protocol). Participants completed a Qualtrics survey via Prolific Academic for $.70 (N = 309 after 11 attention check failures were removed from the dataset). The survey also included a memory check question but results with and without these participants were nearly identical, so we report results with all participants here (see appendix for supplemental analyses). The study used a 2 x 2 x 3 between-subjects design. After being randomly assigned to one of three product category stimulus replicate conditions (home security systems, car airbags, or water filtration systems), each participant was randomly assigned to either a simple or complex brand condition and a fluent or disfluent condition. Because a major goal of the study
was to test the potential mediating role of perceived brand dimensionality, the experimental manipulation of simplicity was purposely vague, allowing participants to interpret simplicity or complexity without bias potentially induced by the manipulation. It read, “Companies can be rated on a number of criteria, one of which is how simple or complex they are. Industry experts have given [company] a rating of "Simple," meaning that they consider the company and its products to be simpler than many others in the product category.” Consistent with well-established approaches in the literature on fluency, disfluency was manipulated by having participants read this information about the brand in a small, low-contrast, hard-to-read font, whereas information in the fluent condition was presented in the same font, contrast, and size as the rest of the text in the survey (see Alter and Oppenheimer 2009).

After the manipulations, participants moved on to a new page with a question measuring their perceptions of the brand’s dimensionality. It read, “Another criteria that companies can be rated on is dimensionality, which measures how many parts/divisions/systems they have. The more parts/divisions/systems they have, the more dimensionality a company has. Based on what you know about [company], how would you rate its dimensionality?” (7-point scale, anchored by “Very low dimensionality” and “Very high dimensionality). After a page break, they answered the same 7-point risk measure from study 1, followed by age, gender, and education questions. Finally, participants completed the study by answering a fluency manipulation check question which read, “In order to help us make this survey as useful as possible, please tell us how easy it was to read the earlier sentence that stated the simplicity/complexity rating of [company].” (7-point scale, from “Very easy to read” to “Very difficult to read”).

Results and Discussion
The manipulation of disfluency was successful. Participants rated the disfluent condition as significantly more difficult to read than the fluent condition (M_{disfluent} = 5.22, M_{fluent} = 1.67, t(307) = 19.76, p < .001). There are two main predictions in study 4. The first is that participants view the simple brand as less risky than the complex brand, but that disfluency of brand information does not meaningfully change the effect of simplicity on risk. If supported, this rules out fluency as the main driver of the effect of simplicity perceptions on risk judgments. We tested this in a model predicting risk with a contrast-coded simplicity condition variable, a contrast-coded fluency condition variable, an interaction variable, and random intercepts by product category. Results supported our prediction (see figure 2 below). Replicating the previous studies, participants rated the simple brand as less risky than the complex brand (β_{simple.contrast} = -1.12, t(305) = -8.11, p < .001, 18.7% of range), but the relationship did not depend on fluency condition (β_{interaction} = -.22, t(305) = 0.81, p = .42).

**FIGURE 2: STUDY 4 PERCEIVED RISK MEANS FOR SIMPLE AND COMPLEX BRANDS PRESENTED FLUENTLY AND DISFLUENTLY**
The second main prediction of study 4 is that consumers’ perceptions of brand dimensionality mediate the relationship between simplicity condition and risk judgments, which would provide support for the notion that simplicity-risk inferences are driven in part by consumers’ lay intuitions about more components providing more opportunities for breakdown. We tested this prediction in a mediation model with 1000 bootstrapped iterations in R. The manipulated simplicity/complexity factor (coding: simple = -.5, complex = .5,) positively predicted participants’ perceptions of dimensionality ($\beta_{\text{complex}} = 2.83$, $t(307) = 21.56$, $p < .001$, 47.2% of range), which in turn led to higher judgments of failure risk ($\beta_{\text{dimensionality}} = .41$, $t(306) = 7.50$, $p < .001$, 6.8% of range). As a result, the indirect effect of manipulated complexity on risk judgments through dimensionality was also positive (bootstrapped indirect effect = 1.17, 95% CI = [.80, 1.52], $p < .001$, 19.5% of range). These findings provide support for our prediction that perceived dimensionality drives simplicity-risk perceptions. To further bolster this conceptualization, we return to the notion of dimensionality in study 5.

**STUDY 5: REFRAMING COMPLEXITY AS REDUNDANCY**

Study 5 provided another exploration of our conceptualization by testing a potential boundary condition. Study 4 showed that the relationship between perceived simplicity and risk judgments are partially driven by perceptions of brand dimensionality, because consumers think more facets or components provide more opportunities for something to go wrong (even when these additional components are fairly abstract). In general, additional complexity is perceived as riskier, but in reality some complexity exists to prevent failures. This is the case when components are added to serve as fail-safes for primary ones. For example, most modern elevators include a feature that keeps the brakes disengaged with electromagnets. If the power
fails, the electromagnets can no longer keep the brakes disengaged, and the brakes engage automatically, preventing the elevator from falling. In terms of our conceptualization, if the motivation for additional dimensionality is explicitly stated as being for the purpose of redundancy (or “backing up” the preexisting dimensions), the positive effect of complexity on risk judgments should attenuate. We tested this scenario in study 5. The study also used a new dependent variable which we selected as a good marketplace proxy for risk perceptions: consumers’ interest in reading a product’s return policy.

**Method**

Study 5 design and analyses were pre-registered on AsPredicted.org (see OSF repository). Participants (N = 816 after 26 attention check failures) were paid $.70 on Prolific Academic for completing a Qualtrics survey. They were randomly assigned to one of two main between-subjects conditions (complexity: normal vs. redundant) and one of three product category stimulus replicate conditions: kitchen appliances, consumer electronics, or car seats and strollers. Participants viewed an introduction to the scenario which read, “We would like you to imagine that there is a [product category] brand, and the brand has 3 main component units that are crucial to its core functions. Please take a moment to think about what those 3 main brand component units could be.” After a page break, they moved on to the complexity manipulation. For the normal condition, the survey read, “Now we would like you to imagine that the [product category] brand decided to add 3 more component units to its existing 3 (resulting in 6 total units).” The redundant complexity manipulation also included this same sentence, but also two additional sentences: “The purpose of these additional component units is to serve in a redundancy/support capacity. They back up the original units.” Participants then answered the
two main dependent measures. The first was return policy interest, which read, “Given that products in this category sometimes fail, break, or stop working correctly, how would the brand adding these 3 additional component units change your likelihood of carefully reading the return policy before buying one of its products?” Because it is possible that adding additional complexity could actually decrease consumers’ interest in reading a return policy due to intuitions about the purpose of the additional components, this measure was a 7-point scale, anchored by “Severely decreases my likelihood of reading the return policy” and “Severely increases my likelihood of reading the return policy,” with “No change” as the midpoint. The second dependent measure was change in complexity, which read, “In your opinion, what does adding the 3 additional component units in this way do to the brand's complexity?” This was also a 7-point scale, anchored by “Makes the brand much simpler” and “Makes the brand much more complex,” with “No change” as the midpoint. Participants finished the survey by answering demographic questions and an attention check.

Results and Discussion

All analyses were pre-registered on AsPredicted.org. Adding 3 additional components to participants’ brands successfully increased perceptions of complexity across conditions ($M_{\text{complexity,change}} = 1.40, t(815) = 40.26, p < .001, 23.3\%$ of range). However, a model predicting perceived complexity change with a contrast-coded condition variable and random intercepts by product category revealed that the amount of complexity added by the three components was significantly less when the components were framed as redundant compared to when they were not ($M_{\text{normal}} = 1.54$ vs. $M_{\text{redundant}} = 1.26, t(813) = -3.98, p < .001, 3.9\%$ of range).
The main prediction of study 5 was that framing additional complexity of a brand in terms of redundancy would mitigate the positive effect of complexity on perceived risk of failures, operationalized as consumers’ reported interest in reading a product’s return policy. In both conditions the additional complexity of the brand increased participants’ interest in reading the product’s return policy, and the increase in interest was statistically higher than the scale’s midpoint of 0 (indicating no change in interest) \((M_{\text{overall}} = .90, t(815) = 20.5, p < .001, 15\% \text{ of range})\). However, as predicted, participants in the redundant complexity condition were less interested in reading the return policy than those in the normal complexity condition \((M_{\text{normal}} = 1.10 \text{ vs. } M_{\text{redundant}} = .70, t(814) = 4.62, p < .001, \text{ difference } = 6.7\% \text{ of range})\).

These findings shed additional light on consumers’ mental models of brand simplicity and complexity. These results also uncover an important boundary condition for the main effect of perceived brand simplicity on lower risk perceptions. Adding dimensionality increases perceptions of complexity, but adding redundant dimensionality increases complexity and risk judgments less than non-redundant complexity.

**STUDY 6: PREFERENCE FOR SIMPLICITY WITH A TASTE-BASED CONSUMPTION GOAL**

The purpose of study 6 was to demonstrate another boundary condition for the effect of simplicity on risk judgments. Unlike study 5 in which the moderation originated from a proposed mechanism for the main effect, the moderating force in study 6 came in the form of a different consumption goal, which changed consumers’ preferences for simplicity. Study 6 also used a different dependent variable representing an important behavioral implication of risk judgments: product choice.

**Method**
Study 6 design and analyses were pre-registered on AsPredicted.org (see OSF repository). Participants (N = 245 after 4 attention check failures) were paid $.70 on Amazon MTurk for completing a Qualtrics survey through Cloud Research. They were randomly assigned to one of two between-subjects conditions (consumption goal: taste vs. quality) and one of three product category stimulus replicate conditions: televisions, barbecue grills, or smart watches. In the introduction to the survey participants were told that the researchers were gathering consumers’ opinions on brands and their products, used in different scenarios. Because they would later make a choice between a product made by a simple or complex brand, participants were also introduced to the idea of simple or complex brands, but the definitions of simple and complex were deliberately vague to reduce the chance of introducing confounding factors. They read the following paragraph:

In the next part of the survey we will be asking you to give your opinions on brands that make [category products]. Brands that make [category products] can be rated on a number of criteria, one of which is how simple or complex they are. For example, when experts rate a brand as "Simple," that means they consider it to be simpler than many others in the product category. When they rate a brand as "Complex," that means they consider it to be more complex than many others in the category.

Participants then proceeded to the consumption goal manipulation. In the quality goal condition the manipulation said, “Now imagine that you are considering buying a [category product] but you want to make sure to choose one that won't break, malfunction, or stop working for some reason.” In the taste goal condition, the second half instead said, “but you want to make sure to choose one with features that match your particular tastes and preferences.” The dependent variable immediately followed the consumption goal manipulation. It read, “When you want to make sure [consumption goal], which [category product] would you prefer -- one
made by a simple brand or one made by a complex brand?” (binary choice between “one made by a simple brand” and “one made by a complex brand”). Participants completed the survey after answering questions about their age, educational history, and gender, as well as an attention check and product category experience measure.

Results and Discussion

We first ran a logistic regression predicting participants’ binary choice of a product made by a simple brand (coded 1) or by a complex brand (coded 0) across conditions. Participants were more likely to choose the product made by a simple brand (Probability = .65, \(t(244) = 20.86, p < .001\)). In order to test our prediction that participants would be more likely to choose the product made by a simple brand when they had a quality-focused (versus taste-focused) consumption goal, we ran a separate general mixed effects logistic regression model predicting the binary choice with a contrast-coded taste vs. quality condition variable and random intercepts by product category. The results supported our prediction. Consumers in the quality condition had a higher probability of choosing the product made by a simple brand than those in the taste condition (Probability\textsubscript{taste} = .57, Probability\textsubscript{quality} = .71; \(z = 2.15, p = .03\)). For robustness, we also ran a Chi-squared test, which showed that the count of choice for the product made by a simple brand was statistically greater in the quality condition than the taste condition (\(\chi^2(1) = 5.17, p = .02\)). These findings suggest that when the nature of the risk is shifted from one based on performance to one based on matching heterogeneous consumer tastes, preference for the simpler brand is weaker, possibly due to consumers’ lay intuitions about additional dimensions or features providing more opportunities for preference matching.

**STUDY 7: RESPONSES TO PRODUCT FAILURES IN CONSUMER REPORTS DATA**
Results from the previous studies provide converging evidence in support of the robustness of simplicity-risk effects, and explore important potential mediating and moderating factors. However, whether simplicity-driven perceptions of less risk can backfire remains an open question. We theorized that by lowering risk perceptions, perceptions of brand simplicity can increase consumer dissatisfaction in the event of product or service failures. We tested this prediction in study 7 using proprietary secondary data. As part of their product evaluation process, product testing and rating organization Consumer Reports conducts extensive consumer experience surveys. We were given access to the consumer survey data for 2018 in four product categories: blenders, grills, mowers, and vacuums.

This dataset was ideal for our purposes because it includes measures of both an overall evaluation (recommendation likelihood) and a report of how many problems the consumer experienced with the product. Consumer Reports does not measure brand simplicity in its consumer experience surveys. Therefore, we collected brand simplicity judgments from an independent sample for the brands in the Consumer Reports data. Our key prediction was an interaction between experienced problems and perceived brand simplicity on recommendation likelihood, such that simple brands are penalized more than complex ones when problems occur.

Consumer Reports Data

Consumer Reports' product reliability and satisfaction data is based on responses to their annual, quarterly surveys. Their Spring survey is emailed to a census sample of about 3 million Consumer Reports members, while their Winter, Summer, and Fall surveys utilize probability samples of these same people. Combined, these online surveys generate more than 800,000
responses per year. The data are representative of Consumer Reports members and the products they own. Each product category, aside from cars, is surveyed once per year.

We obtained data from the 2018 survey year for blenders, grills, mowers, and vacuums. The original dataset consisted of 171,059 customer surveys. We excluded incomplete responses and brands with fewer than 100 observations (because we wanted to have a tractable number of brands for which to collect simplicity scores). After these exclusions, the final dataset consisted of 147,460 observations across 63 brands. (Blenders: 12 brands, 26,727 observations; Grills: 12 brands, 33,360 observations; Mowers: 20 brands, 35,742 observations; Vacuums: 19 brands, 51,631 observations). The median number of observations per brand was 677.

The first key variable of interest was recommendation likelihood (“How likely is it that you would recommend a/an [brand, category] to your friends or family?”). This was measured on a 4-point “Extremely likely” to “Extremely unlikely” scale, which we recoded so that higher numbers indicated greater recommendation likelihood. The second key variable was number of problems experienced. For grills, mowers, and vacuums the question was, “…how many times did it break or stop working as well as it should?” and was measured on a 4-point ordinal scale (None,” “Once,” “Twice,” “Three or more times”). For blenders the question was, “In total, how many problems have you had with this blender since you've owned it,” and was measured on a 6-point scale (“None,” “1,” “2,” “3,” “4,” “5 or more”). For consistency across categories and because there were very few observations of “4” and “5 or more,” we collapsed them into one bucket with “3,” to create a 4-point scale, like the other categories.

In addition to the key variables, we included controls for age of the product and price (as a proxy for premiumness). Age was measured by asking participants what year they purchased
the product, and we recoded it to represent number of years since purchase. Price was measured by selecting a price-range bucket from a list. Though this scale is technically ordinal, for simplicity we include it as a continuous covariate in our main model. Treating this variable as categorical does not substantively affect the results but does make the model much more complex and difficult to interpret.

_Simplicity Scores from an Independent Sample_

We supplemented the _Consumer Reports_ data with average brand simplicity scores that we collected from an independent sample via Prolific Academic. Five hundred participants were diverted from an unrelated study and completed a Qualtrics survey in exchange for $1.90. Data from 22 participants who admitted not following directions were excluded, leaving 478 in the final dataset.

Each participant was randomly assigned to one of the four product categories, then again to a random subset of up to 12 brands within the category, which they evaluated in random order. For each brand, participants were instructed to browse its website (via a link we provided) for several minutes before answering the three overall simplicity questions from study 1. This gave us one measure of simplicity per brand per participant, which we averaged across participants to give us a mean simplicity score for each brand in the dataset. The average number of participant judgments per brand was 66.7. We do not include brand-specific means in the paper because we were not permitted to divulge brand names in reporting of our results.

_Analysis, Results, and Discussion_

Prior to merging the data for the main analysis, we calculated descriptive statistics by product category. They are shown below in table 2. For the main analysis we merged the data for
the four categories into a single data set, first z-scoring the recommendation likelihood,
simplicity, price, and age variables within category.

**TABLE 2: STUDY 4 DESCRIPTIVE STATISTICS BY CATEGORY**

<table>
<thead>
<tr>
<th>Category</th>
<th>Blenders</th>
<th>Grills</th>
<th>Mowers</th>
<th>Vacuums</th>
<th>Total / Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Brands</td>
<td>12</td>
<td>12</td>
<td>20</td>
<td>19</td>
<td>63</td>
</tr>
<tr>
<td>Number of Observations</td>
<td>26,727</td>
<td>33,360</td>
<td>35,742</td>
<td>51,631</td>
<td>147,460</td>
</tr>
<tr>
<td>Mean Recommendation Likelihood</td>
<td>3.50</td>
<td>3.57</td>
<td>3.57</td>
<td>3.47</td>
<td>3.52</td>
</tr>
<tr>
<td>Mean Complexity</td>
<td>4.14</td>
<td>3.91</td>
<td>4.06</td>
<td>3.85</td>
<td>3.97</td>
</tr>
<tr>
<td>0 Problems</td>
<td>88.6%</td>
<td>79.1%</td>
<td>70.6%</td>
<td>78.8%</td>
<td>78.6%</td>
</tr>
<tr>
<td>1 Problem</td>
<td>7.7%</td>
<td>11.0%</td>
<td>14.2%</td>
<td>10.8%</td>
<td>11.1%</td>
</tr>
<tr>
<td>2 Problems</td>
<td>2.4%</td>
<td>4.8%</td>
<td>7.5%</td>
<td>5.0%</td>
<td>5.1%</td>
</tr>
<tr>
<td>3 or More Problems</td>
<td>1.2%</td>
<td>5.2%</td>
<td>7.7%</td>
<td>5.5%</td>
<td>5.2%</td>
</tr>
</tbody>
</table>

Because of the way the problem variable was measured by *Consumer Reports*, we ran two versions of the main model: one with the problem variable operationalized with dummy codes, and one by a set of Helmert contrast codes (Judd et al. 2009). Both were linear mixed-effects models. They tested whether the effect of experiencing a problem on consumers’ willingness to recommend a product depends on the perceived simplicity of the brand. The advantage of the dummy coded model is that it allows us to test the effect of simplicity on recommendation when moving from zero problems to one problem. Its downside is that the model intercept is not meaningful for our predictions, and neither are the remaining dummy-coded interaction variables (zero versus two problems, zero versus three or more, etc.) The benefit of the Helmert code version of the model is that it allows us to test the effect of simplicity on recommendation when moving from zero problems to the remaining three problem levels. Its
intercept is also more interpretable because it represents the mean of all problem level group means on the recommendation dependent variable. We are focused primarily on the interaction of simplicity and problems on the recommendation dependent variable, and each model included random intercepts and slopes by product category. We also ran these models both with and without control variables for the age and price of the product. Note that the sample size for the models with controls is reduced to 126,475 observations because we had incomplete price and age data. Complete results of all models are shown in table 3. Figure 3 shows average recommendation likelihood as a function of brand simplicity/complexity tercile groups and number of problems experienced.

*FIGURE 3: STUDY 4 RECOMMENDATION LIKELIHOOD MEANS AT THREE LEVELS OF BRAND COMPLEXITY AND INCREASING REPORTED PROBLEMS (WITH 95% CONFIDENCE INTERVALS)*

Both versions of the model support our prediction: Experiencing more problems with a product decreases consumers’ subsequent willingness to recommend it, but this is more pronounced for simpler brands. In figure 3, this interaction is apparent by the larger distance
between the upper (squares) and lower terciles (circles) of complexity as the number of problems increases. In the dummy code version of the model, the interaction of a none-versus-one problem dummy code and a brand simplicity variable (with higher values indicating more complexity) on recommendation likelihood was positive and significant ($\beta_{interaction} = .02, t(147400) = 3.01, p = .003, .7\%$ of range). In the other version of the model, the interaction of a contrast-coded problem variable (representing one problem versus the average of the remaining three levels of problems) and brand simplicity (with higher values indicating more complexity) was also positive and significant ($\beta_{interaction} = .03, t(147100) = 3.72, p < .001, 1.0\%$ of range). These positive interaction coefficients (bolded in table 3 below) indicate that more brand simplicity exacerbates the downward effect of problems on consumer recommendation likelihood. This pattern of results replicates when we include control variables for age and price of the products.

### TABLE 3: REGRESSION COEFFICIENTS FOR ALL STUDY 4 INTERACTION MODELS

<table>
<thead>
<tr>
<th></th>
<th>Dummy1</th>
<th>Dummy2</th>
<th>Dummy3</th>
<th>Contrast.0v123</th>
<th>Contrast.1v23</th>
<th>Contrast2v3</th>
<th>Complexity</th>
<th>Product Age</th>
<th>Product Price</th>
<th>Dummy1:Complexity</th>
<th>Dummy2:Complexity</th>
<th>Dummy3:Complexity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent variable:</td>
<td>(Dummy w/ controls)</td>
<td>(Dummy)</td>
<td>(Contrast w/ Controls)</td>
<td>(Contrast)</td>
<td>(Dummy w/ controls)</td>
<td>(Dummy)</td>
<td>(Contrast w/ Controls)</td>
<td>(Contrast)</td>
<td>(Dummy w/ controls)</td>
<td>(Dummy)</td>
<td>(Contrast w/ Controls)</td>
<td>(Contrast)</td>
</tr>
<tr>
<td>Dummy1</td>
<td>-0.29***</td>
<td>-0.27***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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Across all versions of our models in study 7, we find that consumers downgrade simpler brands more than complex ones when there is an unexpected problem. These analyses are correlational, so the normal caveats apply, but they do provide evidence for our hypothesis that consumers punish simple brands for problems due to decreased risk perceptions.

Notably, simpler brands also received poorer evaluations overall. A regression predicting recommendation likelihood with simplicity (again coded with higher values as more complexity) and random intercepts by category shows a positive and significant effect ($\beta_{\text{complexity}} = .09$, $t(147500) = 35.87$, $p < .001$, 3.0% of range). As can be seen in figure 3, recommendation likelihoods were lower for simpler brands at all levels of experienced problems. We mentioned earlier in the paper that some practitioners believe brand simplicity is likely to benefit liking, and data from several of our studies provided support for this. Here in study 7, in a post-usage context, we found that simpler brands obtained lower recommendation likelihoods. One possible explanation is that simpler brands are held to a higher standard. In the case of this Consumer Reports data, pre-purchase liking was likely to be high because the consumer chose to purchase that option. The fact that evaluations for simpler brands were lower, even in the absence of reported problems, should be worrying to marketers of simple brands. It suggests that brand simplicity may be a good strategy for generating attention and trial, but could be less beneficial to post-purchase satisfaction and customer retention.

**STUDY 8: MANIPULATED PRODUCT FAILURE**
The purpose of study 8 is to conceptually replicate the correlational findings of study 7 after experimentally manipulating perceived simplicity and failure. Data from study 7 provide real-world support for consumers’ more acute punishment of brands they believe to be simpler in the event of failures, and suggest that dissatisfaction after product failures may be driven by consumers’ inferences about the relationship between the perceived simplicity of a brand and the likelihood of its products or services failing. In study 8 we test this explicitly by experimentally manipulating both simplicity and failure, and measuring perceived risk and subsequent star ratings, using the same four product categories from the Consumer Reports data in study 7.

**Method**

Study 8 design and analyses were pre-registered on AsPredicted.org (see OSF repository). A combined sample of 2,053 participants from Mechanical Turk and Prolific Academic completed a Qualtrics survey in exchange for $.50.\(^3\) Fifty-eight participants were excluded for either failing an attention check or receiving ReCAPTCHA scores below .5 (indicating high likelihood of being bots), leaving a final sample of 1995 participants (525 from Mechanical Turk, 1750 from Prolific Academic; 47.3% female; design and analyses pre-registered on AsPredicted.org).

Study 8 used a two (simple vs. complex) by two (failure vs. no failure) between-subjects design. Participants were first randomly assigned to one of four product categories, which were the same as those in study 7: vacuums, mowers, grills, or blenders. They then viewed both a

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\(^3\) We planned to collect the entire study 5 sample on MTurk, but because only participants with reliable worker statistics who had not completed our previous studies were allowed to take the survey, it was taking too long to complete. We therefore paused the survey after about 550 participants had completed it, and launched the survey to another 1500 participants on Prolific Academic. Other than this, all plans and analyses associated with study 8 were pre-registered on AsPredicted.org (including the target sample size of ~2000 participants).
simple and complex brand’s marketing image from their assigned category, representing the simplicity factor manipulation. Each brand thus served as a contrast or reference point to the other, and this joint evaluation more accurately reflects how consumers evaluate brands in the real world. Consistent with studies 1-3, simplicity was manipulated visually using primarily empty space, as well as a brief tagline that read, “Blend. Simple.” or the equivalent from one of the other three product categories. In the complex condition manipulation, the image contained additional edges, words, and shapes (see OSF repository for all stimuli). Each image also contained one of two images of the category product itself (e.g., a blender), which was counterbalanced to randomly appear in either the simple or complex condition. Across all categories, the same brand names accompanied the simple and complex brands: Simplicity and Xvolve. Therefore, while participants were assigned to answer questions about only the simple or complex brand, they saw both the simple and complex brands’ images. After viewing the stimuli, participants then answered the same 8-point simplicity and 6-point failure likelihood questions from the previous studies about either the simple or complex brand, in random order.

Participants then moved on to the failure manipulation and were given the following prompt: “Imagine that you have decided to buy the [brand name] [product]. Imagine that you use it, then decide to write an online review of it. On the next page you will see your written review of the product. Please read it carefully.” They then read the product review, the look of which mirrored the format of an Amazon or Yelp review. Participants in the “no failure” condition read the following, which was changed slightly for each category: “Overall, this blender works very well. It blends frozen fruit and ice cubes quickly and smoothly, is fairly quiet, and the lid seals nicely to prevent splatters in my kitchen.” The failure condition review included the same copy,
plus the additional sentence (or its category-specific equivalent): “But every once in a while it turns off unexpectedly, and I have to unplug it, wait a minute, then plug it back in to get it working again.” Finally, participants were shown their category- and simplicity level-specific brand marketing stimulus again, before answering the following question: “Based on what you know about the company and the product, what is your star rating of the [brand name] [product]?” (9-point scale from 1 to 5 stars with half stars in between). Finally, they answered demographic measures of age, gender, and education before completing the survey and receiving payment.

Results and Discussion

The simplicity manipulation was successful (Msimple = 2.96, Mcomplex = 5.62, t(1993) = 43.01, p < .001). The main study 8 analyses examine the relationships between our constructs of interest in two ways. In the first analytical approach, we test for the existence of a significant interaction between the two manipulated factors (simplicity and failure) on subsequent star ratings, which is an analogous model to the main model in study 7. In the second, we test for the existence of a significant mediation and moderation. In the mediation model, we test whether the manipulated simplicity factor variable predicts perceptions of the risk of failures, mediated by continuous evaluations of brand simplicity. In the moderation portion, we test whether perceptions of failure risk predict participants’ subsequent star ratings, moderated by a contrast-coded variable indicating whether or not participants were randomly assigned to the failure or no-failure condition. Together, these two models support the idea that consumers punish simpler brands more for failures because of lowered initial risk perceptions.
Figure 4 shows the results of the two-factor interaction model approach. A contrast-coded failure variable significantly and negatively predicted star rating, but the negative relationship was significantly worse for the simple brand condition, in a linear mixed-effects model with random intercepts by product category ($\beta_{\text{interaction}} = .28, t(1991) = 2.44, p = .01, 3.5\%$ of range; positive interaction coefficient indicates an attenuation of the negative effect of failure on star rating for more complex brands, or a worsening of the effect for simpler brands).

**FIGURE 4: STUDY 8 STAR RATING MEANS BY CONDITION**

We tested the mediation model’s component paths in R with 200 bootstrapped iterations. The manipulated simplicity/complexity factor (coding: simple = -.5, complex = .5,) positively predicts participants’ perceptions of complexity ($\beta_{\text{complex, contrast}} = 2.66, t(1993) = 43.01, p < .001, 38.0\%$ of range), which in turn led to higher perceptions of failure risk ($\beta_{\text{complexity}} = .25, t(1992) = $
As a result, the indirect effect of manipulated complexity on failure risk perceptions is also positive (95% CI = [.56, .78], \( p < .001 \)). For the moderation, perceptions of risk negatively predict star rating, but this negative effect is positively moderated by failure, indicating that failure is not as bad when participants have higher \textit{ex ante} expectations of risk (\( \beta_{\text{interaction}} = .17, t(1991) = 75.05, p < .001, 2.1\% \text{ of range} \)).

Results from study 8 provide experimental support for the prediction that consumers punish simpler brands more for failures, and that the more acute punishment is driven by perceptions of brand simplicity lowering risk perceptions. Support for these predictions came in the form of an interaction of failure and simplicity factors on star ratings, such that the negative effect of failure on star ratings was worse for simpler brands. Then, separate mediation and moderation models demonstrated that manipulated brand simplicity predicted continuous evaluations of simplicity, which in turn predicted lower risk perceptions, and that lower risk perceptions led to lower star ratings, moderated by the existence of a failure. Having lower risk perceptions was problematic when failures occurred, because they felt like a negative surprise. As a result, participants gave lower star ratings. These data corroborate the correlational results from the \textit{Consumer Reports} study and provide converging evidence for our predictions.

\textbf{GENERAL DISCUSSION}

Results from eight experiments, several pre-tests, a practitioner survey, and analysis of proprietary secondary data revealed important consequences of brand simplicity perceptions. By manipulating brand simplicity via stimulus selection and by varying the visual complexity of

\footnote{For an excellent discussion of the merits of this approach compared to one testing a mediational index, see Yzerbyt et al. 2018.}
advertisements, findings from studies 1, 2a, 2b, and 3 demonstrated that consumers judge simpler brands as less risky. They also generally supported the idea of a positive relationship between simplicity and liking. Results from study 4 suggest that consumers’ simplicity perceptions are driven in part by their perceptions of brand dimensionality, and not fluency. Important boundary conditions of redundancy (study 5) and a taste-based consumption goal (study 6), both of which mitigated preference for simplicity, were explored in order to provide additional conceptual clarity. Analysis of a proprietary customer satisfaction dataset from Consumer Reports in study 7 found that consumers penalize simple brands more than complex ones when problems occur in the real world. These findings were then replicated in an experimental design in study 8.

**Implications and Opportunities for Future Research**

Among marketing practitioners, projecting simplicity in marketing is a popular strategy. Marketers have rightfully acknowledged that too much marketing can leave consumers with information overload. Simplicity of marketing, the thinking goes, allows marketers to reach overstimulated consumers in order to communicate benefits or a brand identity. There is some evidence that simplicity can be attention-grabbing in certain contexts. When the marketplace is cluttered with many options, each offering its own unique features, the simple option can stand out (Long 2019). Another possibility was raised by Pieters et al. (2010), who showed that one form of visual complexity encourages consumer attention, while another hurts it. Some have even suggested that there could be cultural differences in attention to more or less simplicity (Masuda and Nisbett 2006).
The current research suggests that simplicity in marketing has a previously undiscovered downside. If it is interpreted by consumers as a kind of promise of simplicity in general, they may develop unrealistic and inaccurate expectations of risk, which can cause dissatisfaction in the event of a product or service failure. Data from study 7 also introduces the possibility that brands perceived to be simple may be held to a higher standard even in the absence of a failure. If this is true, marketers should be more careful about (or at least aware of) the simplicity messages they are sending to consumers. For marketers of objectively simple, high-quality products with low frequency of failures, simplicity in marketing may be the right choice. However, for marketers of complex products with higher risk of failures, simplicity of marketing (and possibly customer acquisition efforts) may need to be traded off with sending more accurate signals of complexity and risk. Of course, findings from moderator studies here suggest that consumers shopping with a taste-based goal, or marketers being more explicit about the nature of simplicity or complexity, could change this calculus yet again.

At their extremes, these ideas raise the possibility that high-risk companies could potentially use excessively complex branding in order to insulate themselves against negative consumer sentiment in response to inevitable failures. Although satisfaction is a post-purchase measure, we see no reason why purchase would be a necessary condition for consumers to form simplicity judgments of brands they encounter.

In this research we did not measure the implied tradeoff between the potential benefits of perceived brand simplicity and the dissatisfaction it may cause, compared to companies perceived to be more complex. Whether (or the degree to which) this is a tradeoff marketers should make is an empirical question that may itself depend on specific characteristics of brands.
The existence of this tradeoff also depends in part on the simplicity-liking relationship. The findings on liking suggest that the link between perceived simplicity and liking could be more nuanced than many marketing practitioners expected.

Finally, it is an open question whether brand simplicity is positive or negative for consumers themselves. We acknowledge that there is often a compromise between simplicity and functionality, and do not expect that consumers prefer simplicity at all costs. Rather, we speculate that marketing should be as simple as possible while still preserving the features that consumers are attracted to. If the relationship between simplicity and liking does not translate to higher levels of choice for simpler brands because consumers are able to undertake a risk-benefit analysis weighing simplicity and functionality, concerns about consumers being taken advantage of by marketers may be unfounded. All else equal, educating consumers about the judgments they are likely to make in response to simplicity in marketing may be the most reasonable first step.

References


Cornil, Yann, David J. Hardisty, and Yakov Bart (2019), "Easy, breezy, risky: Lay investors fail to diversify because correlated assets feel more fluent and less risky," *Organizational Behavior and Human Decision Processes*, 153, 103-117.


