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An Unintended Consequence of Product Upgrades: How Upgrades Can Make Current Consumers Feel Left Behind

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Abstract

In today's advanced economies, consumers are constantly exposed to an increasing number of upgraded products. This research examines consumer response to a brand's launching of an upgraded product and identifies the consumer's ownership status of a previous version of the product as a key dimension that can influence their reaction. Contrary to common intuition, the research demonstrates that while the release of an upgraded product is received positively by nonowners of a previous version, this is not always the case for owners. The authors propose that owners respond unfavorably because the new upgrade increases perceived distance between the owners and the brand as the brand progresses forward with the enhanced products. That is, when the new product replaces an existing product the consumers own, consumers perceive that the brand is moving away from them. This negative effect of an upgrade is attenuated if the owners are provided with an extra source of connection to the brand. The authors investigate this phenomenon in five studies and discuss the implications of their findings.

Keywords

product upgrade, ownership, identity, consumer–brand relationship

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In today's advanced economies, product enhancement is deemed a key component of a firm's success (Chandy and Tellis 1998). Firms have increased the pace of innovation as well as the cadence of introducing newer products in efforts to maintain competitiveness (Okada 2006; Rubera and Kirca 2012). As a result, upgraded products—newer and enhanced versions of an existing product—are becoming prevalent, increasingly exposing consumers to more advanced versions of products they already own while their current products are still fully functional (Bellezza, Ackerman, and Gino 2017). We propose that upgrades may have unintended consequences and examine the key role that consumers' ownership status can play on the impact of upgrades on brand preference. We show that while the release of an upgraded product increases brand preference among potential new consumers, it can decrease brand preference among existing owners. This brand preference decrease is reflected in owners' brand attitude and preference for another product offered by the brand. The negative effect occurs because upgrades increase the perceived distance between existing owners and the brand as the brand advances away from its previous products.

Our research makes several contributions. First, our findings enrich the literature on product upgrades (Bellezza, Ackerman, and Gino 2017; Dagogo-Jack and Forehand 2018; Kim, Malkoc, and Goodman 2021; Miller, Wiles, and Park 2019; Okada 2001, 2006; Sela and LeBoeuf 2017; Wang and John 2019; Zhu, Chen, and Dasgupta 2008) by identifying product ownership status as an important moderator in consumer responses to upgrade releases. We also add to the literature on ownership (Beggan 1992; Kirmani, Sood, and Bridges 1999; Peck and Shu 2009), which generally documents positive effects for owners, by illustrating a context in which the effect may be mitigated. Third, we add to research on consumer–brand relationships (Aaker, Fournier, and Brasel 2004; Aggarwal 2004; Fournier 1998) by showing that brands' seemingly beneficial efforts such as launching upgrades may inadvertently be detrimental to their existing consumers. We suggest that special marketing efforts may be called for when

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introducing new product upgrades to lessen their potential negative effects among the brands' current consumers.

We conducted a pilot study to explore how consumers generally react to a brand launching an upgrade of a product they currently own. To this end, we recruited 572 participants (51% female; $M_{age} = 42.45$ years) via Amazon Mechanical Turk (MTurk) who have encountered this situation (83.3% of those initially polled). We first inquired about the participants' overall evaluation of the situation, asking whether they felt good, not good, or mixed (see Web Appendix A). Surprisingly, only 31% reported that they felt good when a brand released a new upgrade. Participants were then asked a follow-up question about their specific feelings toward the brand. They were given eight response options, four positive and four negative, together with an open-ended "other" option (all counterbalanced), and were asked to select all responses that applied. Of the 572 participants, 22.2% reported positive feelings about a brand when the brand released an upgrade (e.g., "I feel that the brand is innovative," "I feel proud of the brand"), while 51.9% reported negative feelings (e.g., "I feel left behind by the brand," "I feel shortchanged by the brand"), 24.3% reported both positive and negative feelings, and 1.6% remained neutral (e.g., "I'd be indifferent"). Our pilot study revealed an interesting yet counterintuitive phenomenon. Contrary to the common belief that offering more advanced products benefits a brand, releasing new upgrades is not always positive. This finding raises the question of why some consumers respond unfavorably to brand upgrades and whether marketers can respond to such negative reactions. We explore these questions.

Theoretical Foundation

Product Upgrades and Brand Preference

Consumers are constantly exposed to an increasing number of upgraded products. This frequency of upgrades is often the case with a majority of product categories that have become standard goods in modern economies (Bellezza, Ackerman, and Gino 2017). A modest but growing stream of research has investigated product upgrades and their implications for marketing. Generally focusing on the upgrade decision-making process, research has examined psychological factors that hinder (Okada 2001; Wang and John 2019) or promote (Bellezza, Ackerman, and Gino 2017; Dagogo-Jack and Forehand 2018; Kim, Malkoc, and Goodman 2021; Okada 2006; Sela and LeBoeuf 2017; Wang and John 2019) consumers' decisions to purchase upgrades. Examining the impact of vertical product line extensions on brand evaluation, research has shown that the release of an upgraded product is favorable for brands. Offering upgraded products can improve perceptions of brand quality, expertise, and innovativeness, which increase brand attitude and purchase intention (Heath, DelVecchio, and McCarthy 2011; Randall, Ulrich, and Reibstein 1998).

Although previous research offers an important insight into the effects of product upgrades, no research has examined potential contexts in which the upgrades may be received unfavorably by consumers. We propose that consumers' product ownership status, that is, whether consumers possess a brand's existing version of the product, can inform consumers' responses to the brand's launching of an upgrade. Previous research on upgrades has not examined both ownership status and brand perceptions within the context of offering upgraded products (see Table 1). Kirmani, Sood, and Bridges (1999) in the context of line extensions, demonstrated a brand ownership effect whereby brand owners perceive the launch of higher-quality products more favorably than nonowners do. Although the research certainly explores an important issue, it does not examine the nature of the shift. While owners are more favorable toward the brand than nonowners after the launching of higher-quality products, we do not know whether the new product caused a positive shift, a negative shift, or no shift at all among owners and nonowners. It is possible that before the launch, the owners were much more favorable toward the brand, whereas the nonowners were much less favorable toward the brand. We examine this possibility with product upgrades and propose that while an upgrade can be received favorably among nonowners, it can be received unfavorably among owners.

Product Ownership, the Self, and Relationship Distance

Product ownership often conveys much more than functional properties (Belk 1988, 2013; Sirgy 1982). Our possessions are a reflection of our identities and symbolic manifestations of who we are (Beggan 1992; Belk 1988; Richins 1994). For instance, we classify personally meaningful possessions with respect to our personal self and create an association between what is "mine" and "me" (Ferraro, Escalas, and Bettman 2011; Kleine and Allen 1995). As a result, losing one's possession is considered a loss of self (Burris and Rempel 2004; Chatterjee, Irmak, and Rose 2013). Research has further shown that once consumers obtain ownership of a product, they incorporate the product into the mental representation of self, even when the product is not personally meaningful (Cunningham et al. 2008; Turk et al. 2011; Weiss and Johar 2013, 2016). For instance, Weiss and Johar (2013, 2016) have demonstrated that merely owning a product can activate the use of the personal self as a reference category, leading consumers to spontaneously categorize the product they own as "self" and, as a result, judge their own traits in assimilation to traits of the products they own. Simply put, when ownership status of a product becomes salient, the product becomes an anchor that reflects the owner's self.

Apart from its role of creating the link between a product and the self, owning a product also establishes a relationship between consumers and the brand (Aggarwal 2004; Fournier 1998). Physical possession and direct experience of a brand's product generate richer brand associations and greater involvement with the brand (Aaker, Fournier, and Brasel 2004; John et al. 2006; Kirmani, Sood, and Bridges 1999), leading to a

Table 1. Literature on Product Upgrades and Consumer Decisions.

Source	Topic	Analysis	Independent Variable	Outcome Variable	Considered Ownership Status as Independent Variable	Considered Brand Perception as Dependent Variable
Okada (2001)	Consumers' mental cost and marginal cost in their upgrade decision making	Experimental	Opportunity to upgrade with trade-in	Purchase intention	No	No
Okada (2006)	How alignable and nonalignable upgrades affect consumers' upgrade decisions	Experimental	Opportunity to upgrade with trade-in	Willingness to upgrade, willingness to pay	No	No
Zhu, Chen, and Dasgupta (2008)	How trade-in affects consumers' willingness to pay in an upgrade context	Experimental	Opportunity to upgrade with trade-in	Willingness to pay	No	No
Bellezza, Ackerman, and Gino (2017)	Consumers' cavalier behavior toward products when upgrades become available	Experimental	Availability of product upgrades	Product neglect, risky behavior, consumption rate	No	No
Sela and LeBoeuf (2017)	Consumers' neglect of feature overlaps between upgrades and the status quo	Experimental	Opportunity to purchase an upgrade	Willingness to upgrade	No	No
Dagogo-Jack and Forehand (2018)	How consumers' assimilation of brand improvement judgments to their self-improvement perception affects upgrade decisions	Experimental	Perceived self-improvement	Willingness to upgrade, willingness to pay	No	No
Miller, Wiles, and Park (2019)	The effect of trade-in ownership time, trade-in windfall, and brand loyalty on the degree of upgrade	Archival	Trade-in ownership time, trade-in windfall size, brand loyalty	Degree of upgrade (in dollars)	Yes	No
Wang and John (2019)	How encountering dissimilar brand users affects upgrade decision among consumers with a strong self–brand connection	Experimental	Perceiving dissimilar brand users	Likelihood of upgrading	No	No
Kim, Malkoc, and Goodman (2021)	How pricing of a base product affects perceptions of an upgrade and thus, increases consumers' likelihood to upgrade.	Experimental	Pricing of a base product	Likelihood of upgrading	No	No

consumer–brand relationship in which both the owners and the brand become active, contributing members of the relationship dyad (Fournier 1998). We propose that a brand's launching of a new upgrade can inadvertently hurt the consumer–brand linkage by increasing the perceived distance between the brand and its existing consumers who own a previous version of the product. The launch of a new upgrade can bring about a feeling of distance because, while the consumers spontaneously use the previous product they own as a reference for the self (i.e., the product–self linkage), the upgraded product becomes the new embodiment of the brand.

When consumers think about a brand's products, not all products share the same degree of connection to the brand. A newly upgraded product is a brand's most up-to-date and highest-end product, which consumers consider most brand-relevant as it best signals the true capability of the brand (Heath, DelVecchio, and McCarthy 2011; Hubert et al. 2017). Such a product with higher brand relevancy is what

consumers most closely associate with the brand and thus becomes the most relevant embodiment of the brand (Greyser and Urde 2019; John, Loken, and Joiner 1998). As the new upgrade outmodes the brand's previous product and becomes the new representation of the brand, it can make consumers owning the previous product feel left behind by the brand and thus more distanced from the brand because the brand has advanced away from them with the new product. In other words, when an upgrade is released and outmodes the product the existing consumers own, the brand can be perceived as being further away from the consumers' self.

Consumers interact with brands in ways that closely mirror social interactions and use norms of social relationships in guiding their interactions with brands (Aggarwal 2004). Accordingly, relationship distance can vary in consumer–brand relationships just as it does among individuals in social relationships (Connors et al. 2021; Fournier 1998; Liu and Gal 2011). Previous research has conceptualized relationship distance between consumers and brands using different terms, such as self-connection (Fournier 1998), relationship distance (Liu and Gal 2011), self–brand connection (Escalas and Bettman 2005), and brand–self distance (Park, Eisingerich, and Park 2013). Although each construct is nuanced, they all converge on encompassing consumers' subjective perception about how close or distant they feel in relation to target brands (see Connors et al. 2021 for more examples), suggesting that many consumer–brand relationships implicate consumers' perceived closeness to their brands.

Research on relationship distance has shown that a feeling of closeness positively correlates with the quality of a relationship (Aron, Aron, and Smollan 1992) and the liking of the relationship partner (Liu and Gal 2011; Park, Eisingerich, and Park 2013; Rubin 1970). Likewise, feeling distant from a brand results in a less positive consumer–brand relationship, which in turn leads to lower brand commitment (Liu and Gal 2011; Park, Eisingerich, and Park 2013). Accordingly, we predict that the resultant feeling of increased distance between the existing consumers and the brand due to the new upgrade will lead to a decrease in preference for the brand. However, for consumers who do not own an existing product from the brand, we predict that the effect of an upgrade will be positive as demonstrated in previous research. As nonowners do not have the link between the self and the brand or the brand's existing product, they would not have any anchor for self-reference nor a prior relationship with the brand that would cause them to perceive a feeling of an involuntary gap. In this case, their response to the upgrade release would be based on the positive impressions generated by the enhancements of the product (Heath, DelVecchio, and McCarthy 2011; Randall, Ulrich, and Reibstein 1998). More formally, we predict:

H_1: Consumers' product ownership status moderates the impact of a release of a product upgrade such that, while the release increases overall brand preference for nonowners, it decreases overall brand preference for owners.

H_2: The impact of an upgrade release on brand preference for product owners is mediated by the owners' perceived relationship distance from the brand.

Consistent with this line of reasoning, we also predict that the negative effect of an upgrade release on brand preference for owners can be attenuated if the owners are provided with an extra source of connection to the brand that could mitigate the distancing effect of the upgrade:

H_3: The impact of an upgrade release on brand preference for owners is attenuated when the owners are provided with an additional source of connection to the brand.

Overview of Studies

We test our hypotheses and theoretical framework (Figure 1) in a series of studies (Table 2). Study 1 replicates previous research on the positive effect of product upgrades for nonowners but shows the opposite effects for owners. Study 2 uses actual product ownership and provides initial process evidence. Then, we show that the effect is attenuated when the owners are provided with an extra source of connection to the brand (Study 3) and reject an alternative explanation based on frequency of product upgrades by a brand. In Study 4, participants become owners of a product, and we replicate our results and identify a way to mitigate the unfavorable response of current owners. Study 5 complements the experimental results with evidence from a real-world data set containing vehicle ownership data of 49,998 households across the United States. A multilevel analysis of the secondary data provides converging evidence that the release of upgraded versions can negatively affect owners.

Throughout the studies, we measure participants' brand attitude and purchase intention to gauge overall brand preference. For purchase intention, we measure participants' willingness to purchase a cross-category product (other than the upgrade itself) from a focal brand versus from a competing brand. We took this approach because the inclusion of control groups in which the brand does not release upgrades prohibited us from asking about the intention to purchase an upgraded product.

Study 1

We first examined product owners' and nonowners' responses to the release of upgraded products (H_1). We adapted an experimental paradigm (Heath, DelVecchio, and McCarthy 2011) that documented a positive effect of product upgrades on brand associations and overall brand attitude. Although we expected to replicate this finding among nonowners, we predicted that the new upgrades might not be received positively among owners. Following the original study, participants rated the target brand relative to a comparator brand at the same quality level. For the focal product, we used a tablet computer, a product class in which mainstream electronics brands repeatedly release successive products.

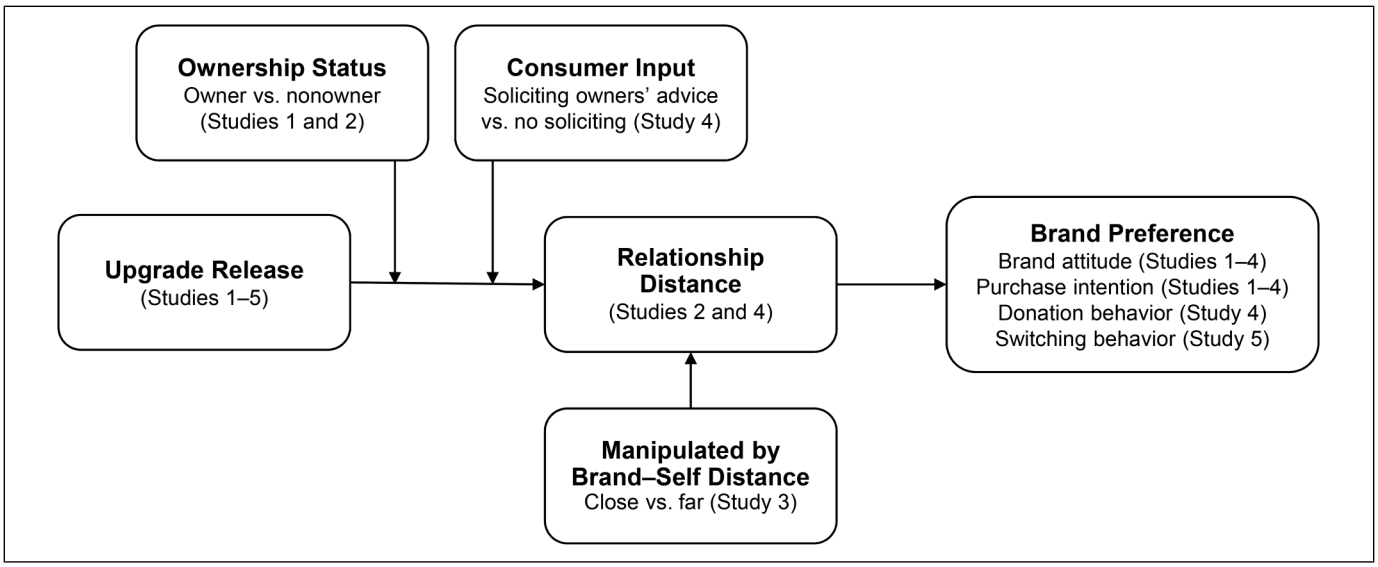

Figure 1. Theoretical framework.

Method

Sample. We recruited 329 undergraduate business students at a large U.S. university for extra course credit.[1] After we excluded 63 students (19%) who failed attention check questions,[2] 266 participants remained in the analysis (43% female; $M_{age} = 20.04$ years). The exclusion rate did not vary by condition. This was true for all studies (see the Web Appendix for results without exclusions for all studies).

Design and procedure. Participants were told that they would be evaluating brands whose names had been masked. They were then randomly assigned to one of four conditions in a 2 (product ownership status: owner vs. nonowner) × 2 (product line: control vs. upgrade) between-subjects design. All participants first read a brief description about the target brand (Brand Y) and a comparator brand (Brand X), both of which were described as mainstream electronics brands that offer several tablet computers. In the control condition, participants saw a table showing information about tablet product lines from the two brands, each having three models that varied in quality (see Web Appendix B for all materials). To mimic the marketplace conventions for naming upgrades, each product was tagged with numbers. Specifically, Brand X's tablet line contained X-a500, X-a600, and X-a700, and Brand Y's line contained Yb-3000, Yb-4000, and Yb-5000, where the higher number represented a better tablet. To emulate the market's price–quality trade-off, participants were also given the price and quality ratings of each product, whereby the quality rating went up by a half star for every $100 increase in price (the comparator models from each brand were equivalent in terms of price and quality). In the upgrade condition, participants were additionally told that Brand Y had introduced Yb-6000 and Yb-7000 as its newer-generation models and were sequentially given information about the products. Ownership status was manipulated by owning or not owning tablets from the two brands. To make both brands be equally perceived in the owner condition, we asked participants in the owner condition to imagine that they purchased and owned both X-a700 and Yb-5000, which were the highest-end models from Brand X and Brand Y respectively. In the nonowner condition, participants were simply told that they did not own any product from either Brand X or Brand Y.

Measures. Brand attitude and purchase intention were measured as dependent variables. Following Heath, DelVecchio, and McCarthy (2011), we asked participants to rate the target brand (Brand Y) relative to a comparator brand (Brand X) to standardize frames of reference across participants. Brand attitude was measured with three items (favorableness, valuableness, preference) on a seven-point scale through a question in the following form: "Please rate how you would feel about the two brands using the comparative scale" (1 = "I'd feel much more favorable about Brand X than for Brand Y," and 7 = "I'd feel much more favorable about Brand Y than for Brand X"). Similarly, purchase intention measured participants' willingness to purchase a cross-category product (desktop computer) from the brands. As in Heath, DelVecchio, and McCarthy (2011), we measured perceived brand expertise (expertise/competence/ability), innovativeness, (innovativeness/creativity/imaginativeness), and prestige (prestige/sophistication/elegance), all using

[1] A post hoc power analysis revealed that Study 1 had an achieved power of 91% in detecting the predicted interaction at the 5% alpha level.

[2] The attention questions consisted of two comprehension questions (Thomas and Clifford 2017), asking participants to report their study conditions, and one instructional manipulation check (Oppenheimer, Meyvis, and Davidenko 2009), asking participants to select specified responses on a given scale (e.g., "If you are paying attention please select 3 and 5 in this question"). Participants who failed at least one of these questions were deemed not to be engaged and thus were excluded from the analysis.

Table 2. Overview of Studies and Findings.

Study (Type) Control	Product (N) Upgrade	Independent Variable	Design and Moderator	Dependent Variables	Main Comparisons: Nonowners Control		Main Comparisons: Owners Upgrade		Findings
Study 1 (lab study)	Tablet computer (266)	Upgrade launch	2 (ownership status: owner vs. nonowner) × 2 (product line: control vs. upgrade)	Brand attitude	4.08	4.43*	4.01	3.42**	A release of upgrades produces positive quality associations for a brand, increasing perceptions of brand expertise, brand innovativeness, and brand prestige for both owners and nonowners. While the release of new upgrades enhances the brand's quality perceptions, it decreases brand attitude and purchase intention of a brand cross-category product for current owners.
				Purchase intention	4.09	4.47*	3.95	3.46**	
				Brand expertise	4.06	4.58**	4.01	4.40**	
				Brand innovativeness	4.40	4.94**	3.99	4.61**	
				Brand prestige	4.00	4.62**	3.98	4.39**	
Study 2 (actual owners on MTurk)	Apple iPhone (344)	Upgrade launch	2 (ownership status: owner vs. nonowner) × 2 (product line: upgrade not salient vs. upgrade salient)	Brand attitude	2.77	3.32*	5.76	5.38†	The study replicates the negative effect of an upgrade on brand attitude and purchase intention for product owners using actual owners by making the upgrade salient or not. Perceived relationship distance mediates the effect of an upgrade on brand attitude (CI = [−.905, −.084]) and purchase intention (CI = [−.839, −.067]) for owners but not for nonowners.
				Purchase intention	2.29	2.80†	5.01	4.21**	
Study 3 (lab study)	Digital camera (362)	Upgrade launch	Moderation of process: all owners, 2 (brand–self distance: neutral vs. close) × 3 (product line: control vs. upgrade vs. upgrade after three years)	Brand attitude	—	—	5.11	4.61**	Moderation of process design replicates the negative effect of an upgrade on brand attitude and purchase intention for owners. The negative effect of the upgrade for owners is mitigated when participants have a personal connection to the brand. The basic effect occurs in both one- and three-year upgrade conditions, suggesting that consumers are not simply reacting against frequent upgrades.
				Purchase intention	—	—	5.18	4.51**	
Study 4 (in-person product distribution)	Bluetooth speaker (285)	Upgrade launch	All owners, three product lines (control, upgrade, upgrade plus advice)	Brand attitude	—	—	3.68	3.01**	The negative effect of brand upgrades for owners is replicated with an actual product using a behavioral outcome. This negative effect for owners is reduced if owners have a chance to connect with the company by providing advice.
				Purchase intention	—	—	2.84	2.49†	
				Donation	—	—	4.20	3.01*	

(continued)

Table 2. (continued)

Study (Type) Control	Product (N) Upgrade	Independent Variable	Design and Moderator	Dependent Variables	Main Comparisons: Nonowners Control		Main Comparisons: Owners Upgrade		Findings
Study 5 (secondary data)	Car (49,998)	Number of newer car generations	Multilevel modeling	Brand switching	—	—	—	Odds ratio = 1.099**	The study supports external validity of the phenomenon by showing that releases of newer generations of car models increase the probability of switching for consumers who own previous versions of the model.

†$p < .1$.
*$p < .05$.
**$p < .01$.

comparative scales (1 = "Brand X is much better than Brand Y," and 7 = "Brand Y is much better than Brand X"). We also measured participants' attitude toward technology using a 13-item Technology Adoption Scale (Bruner, Kumar, and Heppner 2007) to control for any potential effect of individuals' willingness to adopt new technology.

Results

Brand preference. Brand attitude ($\alpha = .94$) was analyzed in a 2 (product ownership status: owner vs. nonowner) × 2 (product line: control vs. upgrade) × between-subjects analysis of covariance (ANCOVA) with attitude toward new technology as a covariate. Although the main effect of upgrade was not significant ($F(1, 261) = 1.32, p > .1$), the analysis revealed a significant main effect of ownership status, such that participants in the owner condition tended to have a less positive attitude toward the target brand ($M_{owner} = 3.71$ vs. $M_{nonowner} = 4.26$; $F(1, 261) = 27.60$, $p < .01$, $\eta^2 = .09$). More importantly, the analysis revealed the predicted two-way interaction of product line and ownership status ($F(1, 261) = 21.19$, $p < .01$, $\eta^2 = .07$). Pairwise comparisons revealed that nonowners were more favorable toward the target brand when the brand released the new upgrades ($M_{upgrade} = 4.43$ vs. $M_{control} = 4.08$; $F(1, 261) = 6.24$, $p < .05$, $\eta^2 = .02$), whereas participants in the owner condition were less favorable ($M_{upgrade} = 3.42$ vs. $M_{control} = 4.01$; $F(1, 261) = 15.69$, $p < .01$, $\eta^2 = .06$). Participants' attitude toward new technology did not affect brand attitude ($F(1, 261) = .55$, $p > .1$; Figure 2).

The results for purchase intention followed the same pattern with a significant main effect of ownership ($M_{owner} = 3.71$ vs. $M_{nonowner} = 4.28$; $F(1, 261) = 23.27$, $p < .01$, $\eta^2 = .08$) and two-way interaction ($F(1, 261) = 13.38$, $p < .01$, $\eta^2 = .05$). Participants in the nonowner condition were more likely to purchase a new computer from the target brand when it had introduced the new upgrades than when it did not ($M_{upgrade} = 4.47$ vs. $M_{control} = 4.09$; $F(1, 261) = 5.42$, $p < .05$, $\eta^2 = .02$). But in the owner condition, participants were less likely to purchase a computer from the target brand when it had introduced the upgrades ($M_{upgrade} = 3.46$ vs. $M_{control} = 3.95$; $F(1, 261) = 7.98$, $p < .01$, $\eta^2 = .03$). Participants' attitude toward technology had no effect on purchase intention ($F(1, 261) = 1.13$, $p > .1$).

Perceived brand expertise, innovativeness, and prestige. Perceived brand expertise ($\alpha = .92$), innovativeness ($\alpha = .91$), and prestige ($\alpha = .92$) were also analyzed in the 2 × 2 ANCOVA. The analysis revealed a positive main effect of upgrades on perceived brand expertise ($M_{upgrade} = 4.49$ vs. $M_{control} = 4.04$; $F(1, 261) = 20.34$, $p < .01$, $\eta^2 = .07$), innovativeness ($M_{upgrade} = 4.77$ vs. $M_{control} = 4.02$; $F(1, 261) = 59.67$, $p < .01$, $\eta^2 = .19$), and prestige ($M_{upgrade} = 4.51$ vs. $M_{control} = 3.99$; $F(1, 261) = 21.28$, $p < .01$, $\eta^2 = .08$). Interestingly, however, the two-way interactions for perceived brand expertise ($F(1, 261) = 0.34$, $p > .1$), innovativeness ($F(1, 261) = 1.89$, $p > .1$), and prestige ($F(1, 261) = 0.83$, $p > .1$) were not qualified, indicating that regardless of the ownership status, the target brand was perceived more favorably in these dimensions when it launched new upgrades. See Figure 3 for comparisons.

Discussion

Study 1 provides initial evidence that product upgrades differentially affect consumers depending on ownership of an existing product. We document that while the positive effect of upgrades on brand preference persists for nonowners, the opposite occurs for owners, supporting H_1. Other positive associations produced by upgrades are observed among owners, but they do not lead to higher brand preferences, suggesting that another factor is responsible for the negative impact of upgrades on brand attitude and purchase intentions.

Study 2

Study 2 examines actual product owners' and nonowners' responses to the release of upgrades (H_1) and tests the

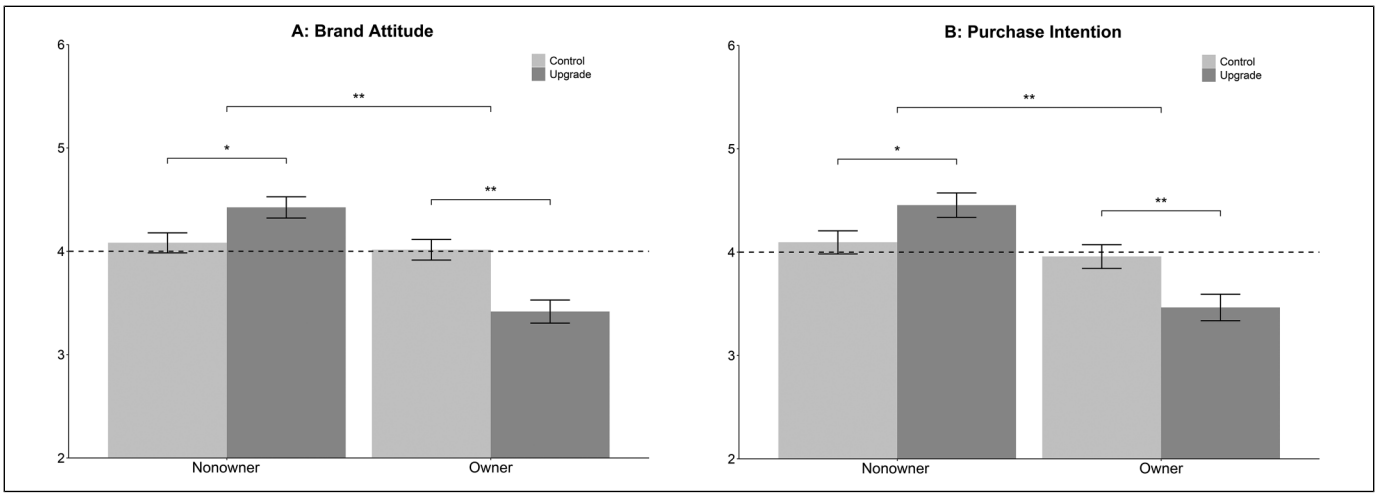

Figure 2. Effects of upgraded products on brand attitude and purchase intention.
*$p < .05$.
**$p < .01$.
Notes: The error bars represent standard errors.

underlying process (H_2). We recruited owners and nonowners of Apple's iPhone. A key challenge for testing our hypothesis using the actual brand is that we cannot manipulate the releases of upgrades that have already occurred in the market. To circumvent this limitation, we instead manipulate the saliency of upgrades by emphasizing to the participants either newer generations (i.e., upgraded products) or older generations of iPhone. To test our hypotheses, we recruited participants who owned a 10th-generation iPhone (iPhone 7 or 7 Plus)[3] and participants who did not own an iPhone (i.e., owners of smartphones from brands other than Apple). The 10th-generation iPhone was selected as reference because it was neither too outdated nor too up-to-date at the time of this study. In the upgrade condition, the presence of upgrades was made salient by sequentially presenting each of the newer generations of iPhone that followed the 10th-generation iPhone. In the control condition, the presence of upgrades was made less salient by presenting the older generations of iPhone that preceded the 10th generation.

Method

Sample. The sample size was determined via a priori power analysis using G*Power to ensure 90% power to detect an effect size of $\eta_p^2 = .03$ at the 5% alpha level.[4] According to that analysis, we recruited 352 U.S.-based participants for a paid study through MTurk. To recruit owners and nonowners of the iPhones (i.e., iPhone 7 or 7 Plus), all participants joining our study were first asked to indicate both the brand and the model of the smartphone they currently own. Those who owned an iPhone 7 or 7 Plus were coded as Apple owners, and those who did not own any iPhones were coded as non–Apple owners. Those who owned iPhones but not specifically the iPhone 7 or 7 Plus were not allowed to participate. After we excluded 8 participants (2%) who failed attention questions,[5] 344 participants remained in the analysis (48% female; $M_{age} = 33.12$ years).

Design and procedure. In a 2 (product ownership status: owner vs. nonowner) × 2 (product line: upgrade vs. control) between-subjects design, owners and nonowners first read a brief description of iPhones and were randomly assigned to either the upgrade or control condition. In the upgrade condition, participants read information about the 10th-generation iPhones including images, specifications, and verbal descriptions, followed by the information about the newer generations—11th, 12th, and 13th generations—in the sequence they were released in the market (see Web Appendix C for the materials). By sequentially presenting newer generations of the iPhone, we intended to make the presence of the newer generations more salient in the upgrade condition. In the control condition, participants saw information about 7th-generation iPhones, followed by those of the 8th, 9th, and 10th generations in that order. By sequentially presenting the older generations in order up to the 10th generation, we intended to make the newer generations (11th, 12th, and 13th) less salient, thereby implying that the 10th generation was an upgraded model. After seeing the sequence of information, participants rated measures on perceived relationship distance and on brand preference indicated by both attitude toward the Apple brand and purchase intention of another Apple product (computer monitor).

[3] We combined iPhone 7 and iPhone 7 Plus because they fall under the same generation with the same release date. We did the same for all other generations of iPhone that have a Plus version.

[4] The effect size comes from a pilot study testing for interaction between the effect of upgraded products and ownership status. The effect size, η_p^2, for the 2 × 2 interaction term was .03.

[5] The same manipulation check (Oppenheimer, Meyvis, and Davidenko 2009) from the previous study was placed between measurement items.

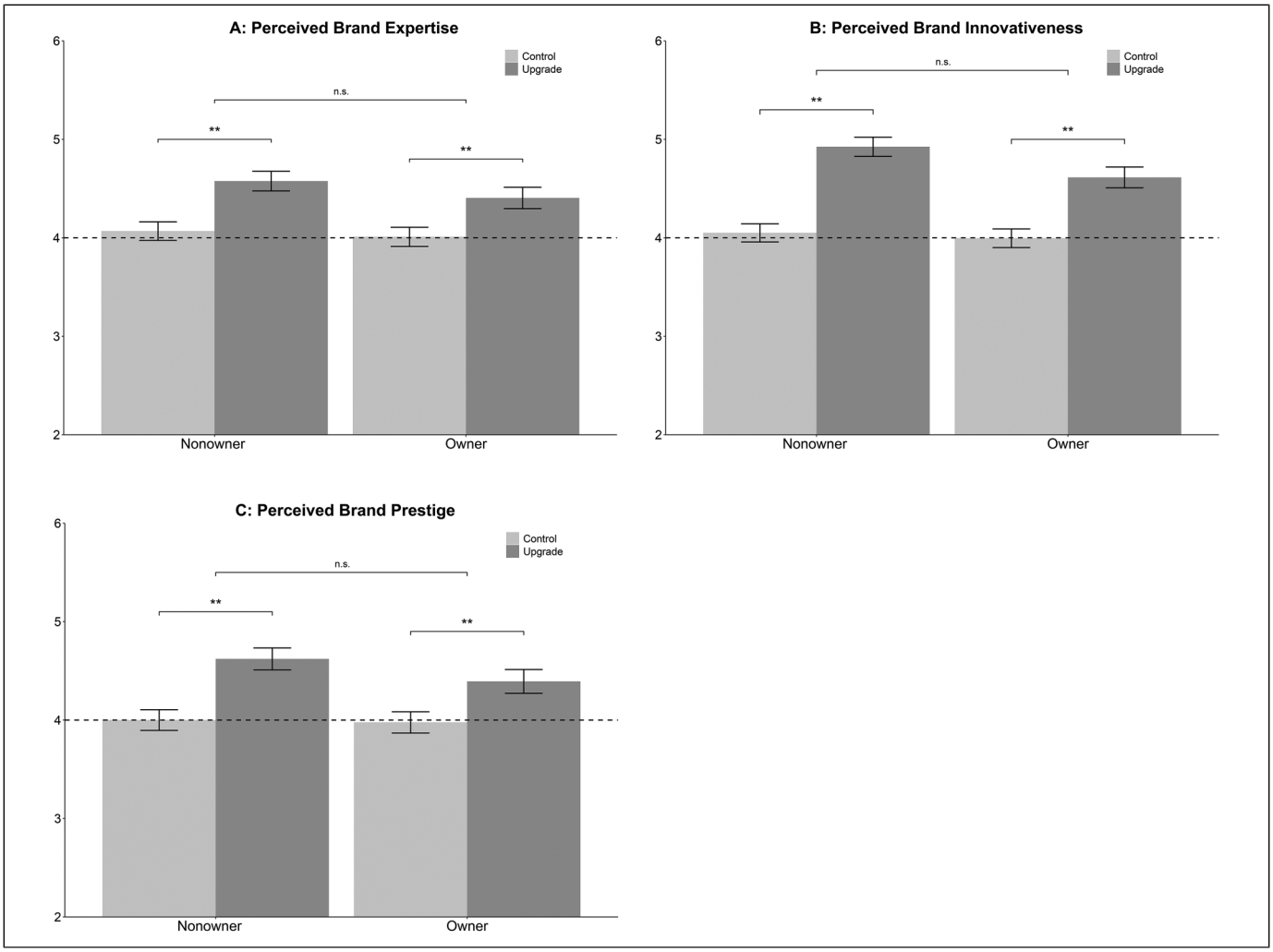

Figure 3. Effects of upgraded products on perceived brand expertise, innovativeness, and prestige.
*$p < .05$.
**$p < .01$.
Notes: n.s. = not significant. The error bars represent standard errors.

Measures. Participants first rated their perceived relationship distance from Apple using the Inclusion of Other in the Self scale (Aron, Aron, and Smollan 1992). The Inclusion of Other in the Self scale has been used in a substantial body of research as a measure of perceived distance with high reliability, discriminant validity, and convergent validity with other distance measures (see Mashek and Aron 2004 for a review). Following Aron, Aron, and Smollan (1992), we presented participants with a set of seven pairs of circles, in which one of the circles was labeled "self" and the other circle was labeled "Apple." Participants were asked to choose the set of circles that best describes their relationship with Apple. The more the circles overlapped, the closer they felt to Apple. Brand attitude and intention to purchase another Apple product (computer monitor) were measured as the dependent variables reflecting brand preference. Specifically, brand attitude was measured with three items (preference, favorableness, and valuableness) on a seven-point scale (e.g., "Apple is a favorable brand for me"; 1 = "strongly disagree," and 7 = "strongly agree"). For purchase intention, participants were asked: "Imagine you are planning to purchase a new computer monitor. Apple as well as other electronics brands (Samsung, LG, HP, etc.) offer an array of different computer monitors. How likely would you choose Apple over the other brands for your monitor?" Answer choices were on a seven-point scale (1 = "very unlikely," and 7 = "very likely").

Results

Brand preference. Brand attitude ($\alpha = .96$) was analyzed in a 2 (product ownership status: owner vs. nonowner) × 2 (product line: control vs. upgrade) between-subjects analysis of variance. Although the main effect of upgrade was not significant ($F(1, 340) = .28$, $p > .1$), the analysis revealed a significant main effect of ownership status, such that owners had more favorable attitude toward Apple than nonowners had ($M_{owner} = 5.57$ vs.

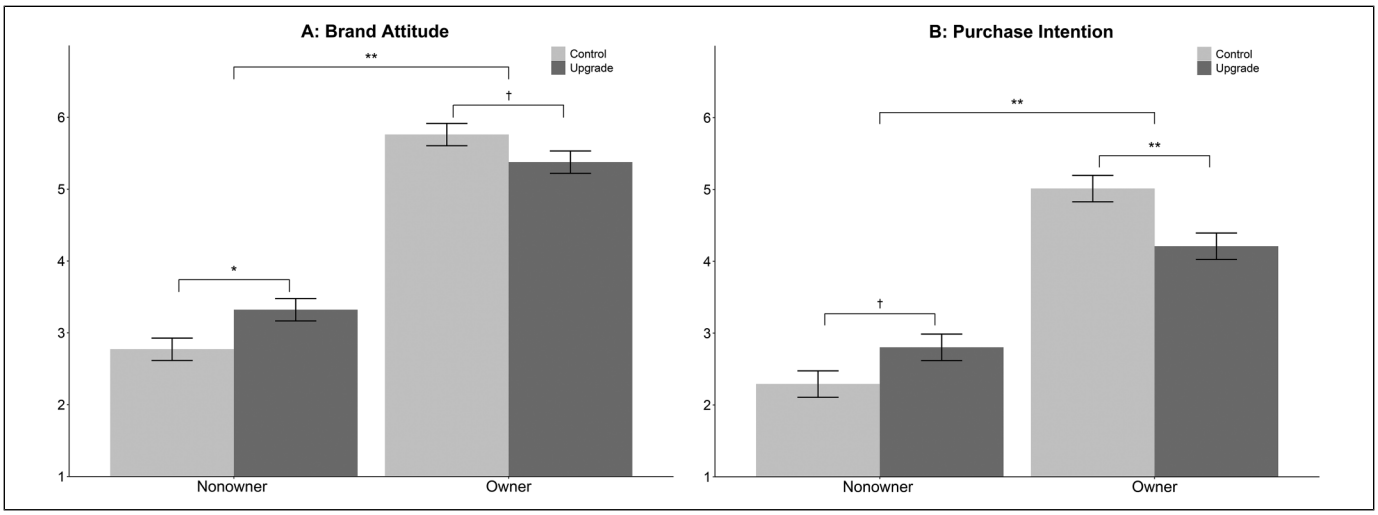

Figure 4. Effects of upgrades on brand attitude and purchase intention for a brand cross-category product.
†$p < .1$.
*$p < .05$.
**$p < .01$.
Notes: The error bars represent standard errors.

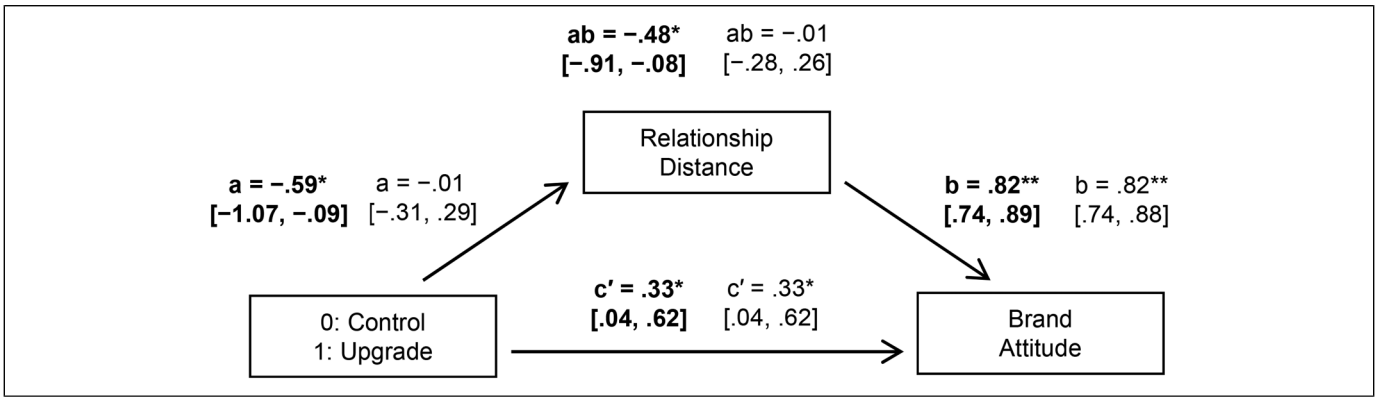

Figure 5. Conditional indirect effects of upgraded products on brand attitude through perceived relationship distance for owners and nonowners.
*$p < .05$.
**$p < .01$.

$M_{nonowner} = 3.05$; $F(1, 340) = 262.86$, $p < .01$, $\eta^2 = .44$). This main effect of ownership status is not surprising as brand owners are typically more favorable toward their brand than nonowners are (Beggan 1992; Kirmani, Sood, and Bridges 1999). Most importantly, we found the anticipated two-way interaction of product line and ownership status ($F(1, 340) = 9.02$, $p < .01$, $\eta^2 = .03$). Pairwise comparisons revealed that the nonowners had a more favorable attitude toward Apple when they were exposed to newer generations of iPhones ($M_{upgrade} = 3.32$ vs. $M_{control} = 2.77$; $F(1, 340) = 6.26$, $p < .05$, $\eta^2 = .02$). In contrast, owners' attitudes toward the brand were more favorable at the 10% alpha level when upgrades were not salient ($M_{upgrade} = 5.38$ vs. $M_{control} = 5.76$; $F(1, 340) = 3.04$, $p = .08$, $\eta^2 = .01$; Figure 4).

Purchase intention for a cross-category product from the brand (monitor) followed a similar pattern. Although the main effect of upgrade was not significant ($F(1, 340) = .28$, $p > .1$), the main effect of ownership status was significant, as owners were more likely to choose an Apple monitor than nonowners were ($M_{owner} = 4.61$ vs. $M_{nonowner} = 2.55$; $F(1, 340) = 125.74$, $p < .01$, $\eta^2 = .27$). More importantly, the upgrade × ownership status interaction was also significant ($F(1, 340) = 12.74$, $p < .01$, $\eta^2 = .04$). Parallel to the results for brand attitude, pairwise comparisons revealed that nonowners were more willing to choose the Apple monitor at the 10% alpha level when they were exposed to newer generations of iPhones ($M_{upgrade} = 2.80$ vs. $M_{control} = 2.29$; $F(1, 340) = 3.86$, $p = .05$, $\eta^2 = .01$). In contrast, owners were less willing to choose Apple when they were exposed to product upgrades ($M_{upgrade} = 4.21$ vs. $M_{control} = 5.01$; $F(1, 340) = 9.50$, $p < .01$, $\eta^2 = .03$).

Moderated mediation through perceived relationship distance. To test whether the indirect effect of upgraded products on our

dependent variables through perceived relationship distance is contingent on ownership status, we conducted a moderated mediation analysis. We first used brand attitude and examined whether ownership status moderates the path labeled "a" in our model (Figure 5), in which differences in perceived relationship distance mediate the effect of upgraded products on brand attitude. We used the Lavaan package (Rosseel 2012) in R to estimate the model using 5,000 bootstrap samples. The result showed that the index of moderated mediation was marginally significant (−.47, 90% CI = [−.912, −.081]) with its 90% confidence interval not including zero (Hayes 2017), suggesting that the indirect effect of upgraded products on brand attitude varies as a function of ownership status. As hypothesized, the conditional indirect effect of upgraded products was significant for owners (−.48, 95% CI = [−.905, −.084]) but not for nonowners (−.01, 95% CI = [−.276, .262]). These results indicate that upgraded products affected brand attitude through perceived relationship distance for owners but not for nonowners.

The results for intention to purchase a cross-category product followed a parallel pattern. The index of moderated mediation was marginally significant (−.44, 90% CI = [−.839, −.057]) with its 90% confidence interval not including zero. Moreover, the conditional indirect effect of upgraded products was significant for owners (−.45, 95% CI = [−.839, −.067]) but not for nonowners (−.01, 95% CI = [−.253, .242]), indicating that the upgraded products affected purchase intention for Apple through perceived relationship distance for owners but not for nonowners (see Web Appendix C for the corresponding figure for purchase intention).

Discussion

Using Apple's iPhone 7 and 7 Plus as the focal products, Study 2 showed that the saliency of newer iPhone generations has a distinct effect on consumers' preference toward Apple depending on their product ownership status (H_1). For nonowners, making newer generations of the iPhone salient increased their preference for Apple. But, for current owners, making the newer generations salient reduced their willingness to choose Apple (among other competing brands) when purchasing another product. As expected, this effect on owners was mediated by the owners' perceived relationship distance from the brand (H_2). Although a few simple effects were marginally significant, the upgrade × ownership interactions were consistently significant, illustrating that ownership status is key in understanding the response to upgraded offerings.

While Study 2 provided evidence in favor of our hypotheses using actual brand owners, we acknowledge a limitation regarding our upgrade manipulation. Although we believe that manipulating the saliency of upgrades was an effective approach given the infeasibility of controlling actual iPhone releases, it may have introduced other correlated factors that affected the observed effect. Our next study remedies the limitation by using a more controlled setting.

Study 3

The purpose of Study 3 is threefold. First, focusing specifically on owners, we test our proposed mechanism through a moderation-of-process design (Spencer, Zanna, and Fong 2005) by manipulating consumers' relationship distance. Since product owners react unfavorably in comparison with nonowners because the upgrade increases the owners' relationship distance from the brand, the negative response of product owners should diminish if the owners are provided with an extra source of connection to the brand that could reduce the perceived distance (H_3).

Previous research has highlighted that brand–self distance (Park, Eisingerich, and Park 2013), defined as the perceived distance between a brand and the self, can be determined by the degree of self-relevance of the brand. If a brand is highly relevant to one's self, the relationship with the brand will be perceived as psychologically closer (Escalas and Bettman 2005; Park, Eisingerich, and Park 2013). Accordingly, we use self-relevance of a brand to alter relationship distance. We manipulate whether the focal brand is connected to a group that participants belong to (i.e., their university). We predict that this extra source of connection to the brand should lessen the negative effect of upgrade releases. Second, we test an alternative explanation that owners respond unfavorably to new upgrades because they see the frequent release of upgrades as the brand's strategic action to entice them to spend money unnecessarily. Thus, it is plausible that rather than feeling distanced, owners may simply be upset that the brand is releasing upgrades when their current products are still functional. To examine this possibility, we include an additional condition in Study 3 in which the interval between the new upgrades and the previous version is three years. The three-year interval was selected based on a pretest (see Web Appendix D) as being a longer-than-moderate interval between upgrades. If the alternative account holds, we would not observe owners' brand preference reduced when the upgrade interval is as long as three years. Study 3 uses a digital camera as the focal product.

Method

Sample. We recruited 439 undergraduate business students at a large U.S. university for extra course credit.[6] After we excluded 77 students (18%) who failed attention check questions identical to those used in Study 2, 362 participants (49% female; M_{age} = 20.16 years) remained in the analysis.

Design and procedure. Participants were randomly assigned to one of six conditions in a 2 (brand–self distance: neutral vs. close) × 3 (product line: control vs. upgrade vs. upgrade-after-three-years) between-subjects design. All participants were first given a brief description of the focal brand and a

[6] A post hoc power analysis revealed that Study 3 had an achieved power of 77% in detecting the predicted interaction at the 5% alpha level.

product they owned. Specifically, they imagined owning a digital camera from a brand named Cephix. In the neutral brand–self distance condition, Cephix was simply described as a brand that specializes in manufacturing imaging and optical products such as cameras, camcorders, and photocopiers. In the close brand–self distance condition, participants were given additional information that Cephix was a brand launched by a group of students from their own university as part of a project for a marketing course that participants were taking at the time of the study. The information also emphasized that the brand was still run by those graduates along with other students from their university. We expected that creating the link between the brand and the group to which participants belong would make the brand be perceived as more self-relevant and thus psychologically closer (Escalas and Bettman 2005).

Participants were then given information about Cephix's product line. They were told that Cephix offered several digital cameras that varied in price and quality and were presented with three camera models available from Cephix—CX-100, CX-300, and CX-500—along with information on product specifications of each model, including product image, price, rating, resolution, effective pixels, and so on (see Web Appendix D for the materials). In the control condition, participants imagined owning CX-500, the highest-end model from Cephix. In the upgrade condition, while owning CX-500, participants were additionally informed that Cephix had subsequently released CX-700 and CX-900 as upgraded models and were presented with specification information about the upgrades that included superior functions and features in comparison with those of previous models. Finally, participants in the upgrade-after-three-years condition were presented with the same upgraded models but were further informed that the upgrades were introduced three years after the release of the CX-500 model they owned.

Measures. After viewing the scenario and the product information, participants rated the same dependent variables as in Study 2, except that purchase intentions referred to a photo printer to fit the context. Participants were asked: "Imagine you are planning to purchase a photo printer. Cephix as well as other competing brands offer different photo printing products. How likely would you choose Cephix over other brands?" Answer choices were on a seven-point scale (1 = "very unlikely," and 7 = "very likely"). Finally, participants completed a measure for brand–self distance as a manipulation check using two 11-point scale items adapted from Park, Eisingerich, and Park (2013).

Results

Manipulation check. An independent-samples t-test confirmed that participants in the close brand–self distance condition felt closer to the brand, measured by the brand–self distance scale (r = .89), than participants in the neutral brand–self distance condition ($M_{neutral} = 6.06$ vs. $M_{close} = 6.50$; $F(1, 360) = 4.72$, $p < .05$, $\eta^2 = .01$), verifying that making the brand more relevant to the participants reduced the perceived distance between the self and the brand as intended.

Brand preference. The overall pattern of results is shown in Figure 6. We used contrast coding for our analysis. Specifically, two orthogonal contrasts tested our prediction: The first contrast reflected our predicted pattern of means in the control, upgrade, and upgrade-after-three-years conditions (coded as control = 2, upgrade = −1, upgrade-after-three-years = −1), whereas the second contrast compared the residual difference between the upgrade and the upgrade-after-three-years conditions (coded as no-upgrade = 0, upgrade = 1, upgrade-after-three-years = −1). To test our prediction, we regressed these two contrast codes, brand–self distance (neutral vs. close), and the interaction between the contrast codes and brand–self distance on brand attitude ($\alpha = .91$). The main effect of the first contrast was marginally significant ($F(1,356) = 3.13$, $p = .08$, $\eta_p^2 = .01$), whereas the main effect of the second contrast was not ($F(1,356) = 0.10$, $p > .1$, $\eta_p^2 = .00$), indicating that brand attitude was generally lower in the upgrade and upgrade-after-three-years conditions than in the control condition and that the two upgrade conditions were not statistically different. The effect of the first contrast was qualified by an interaction with brand–self distance ($F(1,356) = 5.72$, $p < .05$, $\eta_p^2 = .02$), whereas the effect of the second contrast was not ($F(1,356) = .09$, $p > .1$, $\eta_p^2 = .00$), indicating that the brand–self distance moderates the predicted pattern of means across the three product conditions (i.e., control vs. upgrade vs. upgrade-after-three-years).

As in Study 2, the pattern was significant when the brand–self distance was neutral ($F(1,356) = 8.68$, $p < .01$, $\eta_p^2 = .02$). Participants had a more favorable attitude in the control condition ($M = 5.11$, $SD = .94$) than in the upgrade condition ($M = 4.61$, $SD = 1.00$) and the upgrade-after-three-years condition ($M = 4.67$, $SD = 1.03$). However, when the brand–self distance was perceived as close, the effect of upgrades disappeared ($F(1,356) = .19$, $p > .1$, $\eta_p^2 = .00$); there was no difference between the control ($M = 4.90$, $SD = .96$), upgrade ($M = 4.96$, $SD = .87$), and upgrade-after-three-years ($M = 4.98$, $SD = 1.16$) conditions. Thus, while the unfavorable effect of an upgrade release persisted when the brand–self distance was neutral, perceiving brand–self distance as close reduced the effect. Importantly, the fact that there was no significant difference between the two upgrade conditions when the brand–self distance was perceived as neutral rules out consumers' rejection of very frequent upgrades as an alternative explanation.

The analysis for purchase intention yielded parallel results. The main effect of the first contrast was significant ($F(1, 356) = 6.67$, $p < .05$, $\eta_p^2 = .02$), whereas the main effect of the second contrast was not ($F(1, 356) = .06$, $p > .1$, $\eta_p^2 = .00$), indicating that purchase intention was generally lower in the upgrade and upgrade-after-three-years conditions than in the control condition and that the two upgrade conditions were not statistically different. The analysis also revealed a marginally significant main effect of self-relevance ($M_{not\text{-}self\text{-}relevant} =$

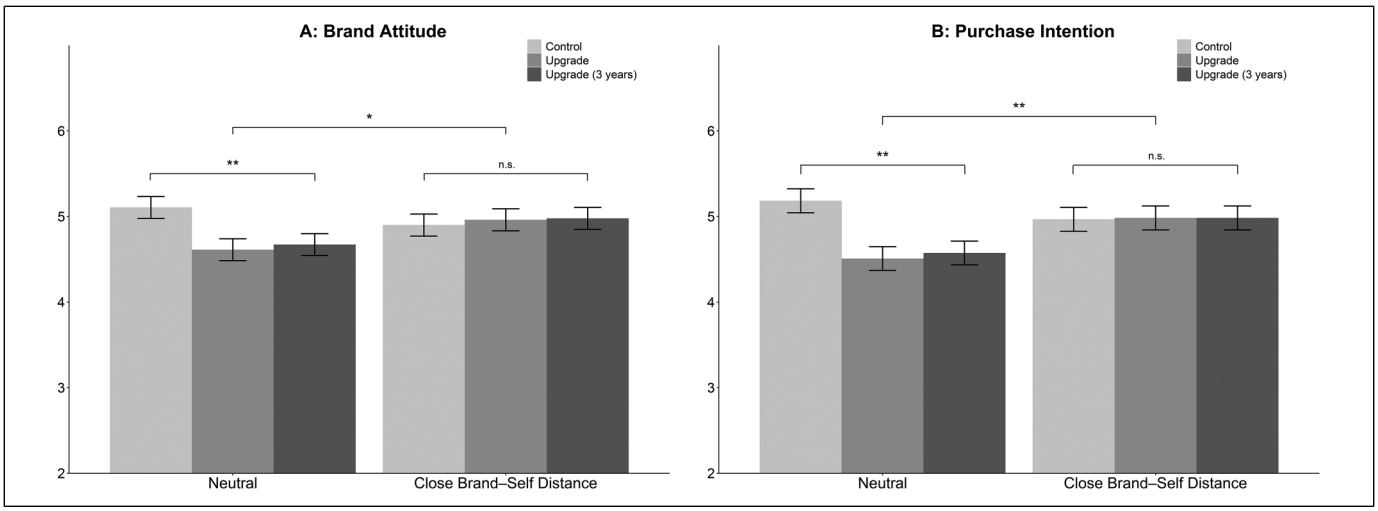

Figure 6. Effects of upgrades on brand attitude and purchase intention of a brand cross-category product.
*$p < .05$.
**$p < .01$.
Notes: n.s. = not significant. The error bars represent standard errors.

4.75 vs. $M_{self\text{-}relevant} = 4.98$; $F(1, 356) = 3.81$, $p = .05$, $\eta_p^2 = .01$), suggesting that people who perceived a close brand–self distance were more likely to choose their current brand over competing brands for other purchases. But more importantly, the effect of the first contrast was qualified by an interaction with brand–self distance ($F(1, 356) = 7.40$, $p < .01$, $\eta_p^2 = .02$), whereas the effect of the second contrast was not ($F(1, 356) = .06$, $p > .1$, $\eta_p^2 = .00$). This finding demonstrates that the brand–self distance moderates the predicted pattern of means across the three conditions. As predicted, the contrast was significant when the brand–self distance was perceived as neutral ($F(1, 356) = 14.10$, $p < .01$, $\eta_p^2 = .04$); participants were less likely to choose their current brand in both the upgrade condition ($M = 4.51$, $SD = 1.12$) and the upgrade-after-three-years condition ($M = 4.57$, $SD = 1.09$) than in the control condition ($M = 5.18$, $SD = .87$). However, when the brand–self distance was perceived as close, the effect of an upgrade was mitigated ($F(1, 356) = .01$, $p > .1$, $\eta_p^2 = .00$); there was no difference between the control ($M = 4.97$, $SD = 1.02$), upgrade ($M = 4.98$, $SD = 1.10$), and upgrade-after-three-years ($M = 4.98$, $SD = 1.27$) conditions.

Discussion

Study 3 used a moderation-of-process design to further examine our proposed mechanism by manipulating the extent to which the brand is perceived as close or neutral to one's self. Our findings indicate that the negative effect of upgrade releases on owners is significantly reduced if owners are provided with an extra source of connection to the brand (H_3). This result not only provides additional evidence supporting our proposed mechanism but also identifies a boundary condition for the unfavorable effect of upgrade releases on owners. The negative reactions are less likely to occur for brands that the owners feel are relevant to the self and thus feel personally connected to. Furthermore, Study 3 rules out the alternative account that frequent timing of upgrades accounts for our effects. While our results are not supportive of this account, we acknowledge that our frequency manipulation may not have been strong enough. Thus, we ran an additional study specifically to examine this possibility by manipulating the frequency of upgrades as 2 and 4 months or 1 and 2 years after the release of the consumer's current model. The study, which is described in Web Appendix D, shows no difference between the upgrade conditions, both resulting in lower purchase intentions and brand attitude mediated by perceived relationship distance between the consumer and the brand.

Study 4

To increase the external validity of the present research, we designed a study in which participants became product owners. We conducted a two-phase study in which we first endowed participants with a real product—a Bluetooth speaker—and later assessed participants' responses to upgrades. We also tested a potential strategy to reduce the unfavorable response of current owners when upgrades are introduced. Research has shown that soliciting consumer input produces an intimacy effect whereby consumers feel closer to a company when they are asked for advice. Specifically, advice-giving induces the consumers to take the perspective of the company, and the empathetic thought process subsequently increases the consumers' feeling of closeness toward the company (Liu and Gal 2011). Thus, we predicted that soliciting advice from existing owners would mitigate the negative responses to upgrades because advice-giving could lessen the feeling of distance resulting from the upgrades.

Method

Sample. We recruited 357 participants from a behavioral lab at a large U.S. university for a $5 reward and a raffle entry to win $50. Of the 357 participants, 27 participants (7.6%) did not complete the second phase of the study, 13 participants (3.6%) chose not to accept the target product, and 11 participants (3.1%) no longer possessed the target product by the time of the survey. A total of 306 eligible participants participated in the survey, and after we excluded 6 participants (1.7%) who did not finish their responses and 15 participants (4.2%) who failed attention check questions, 285 participants (72% female; $M_{age} = 21.86$ years) remained in the analysis.

Design and procedure. The study was conducted in two phases. In the first phase, participants came to a designated location and selected one of two products: our focal product (i.e., a Bluetooth speaker) and a decoy product (i.e., a set of colored pencils), which they could keep. We gave participants a choice between the products to better engender a feeling of ownership toward the product they selected and to reflect the voluntary nature of product choice in the marketplace. The Bluetooth speaker was allegedly from a start-up brand called Crescendi that specializes in portable mini audio devices. The brand was named on the basis of a pretest (see Web Appendix E for materials for Study 5), and the name was laser printed on the speakers to make the brand seem as realistic as possible. After participants made their choice, only those who selected the speaker were qualified for the study and were given information about Crescendi's current Bluetooth speaker lineup. The information contained images and specifications for three different generations of Crescendi's speakers (e.g., CR-i10, CR-i30, and CR-i50), among which the CR-i50, the most recent generation of Crescendi's speakers, was the one that participants received. Participants were then told that they would receive a survey about the speaker in two weeks via email. The two-week interval was adopted to secure a moderate duration of ownership to allow for a feeling of ownership over the speaker (Shu and Peck 2011). Also, having the interval would minimize any potential positive mood effect from receiving the speaker.

Two weeks later, in the second phase, participants were randomly assigned to one of three conditions (product line: control vs. upgrade vs. upgrade with advice) in a between-subjects design. In the control condition, participants were presented with the same information they received in the first phase and were informed that the speaker they owned was still the latest-generation speaker from Crescendi. In the upgrade condition, participants were informed that Crescendi had since released newer-generation speakers (i.e., CR-i70 and CR-i90) that were superior to the CR-i50 they currently owned. The specifications for the new speakers mirrored those of advanced Bluetooth speakers in the marketplace, and the images of the speakers were carefully selected based on a pretest to ensure that they were at least as attractive as the one that participants had (see Web Appendix E). In the upgrade-with-advice condition, participants were asked for their advice for Crescendi before being informed about the new upgrades. Specifically, participants were told that we, as researchers at the business school, were working with several young businesses and that Crescendi was seeking advice from consumers. Participants were asked to provide advice for improving Crescendi's future products. Afterward, they were informed about Crescendi's newer-generation speakers.

Measures. We measured brand attitude, purchase intentions, and perceived relationship distance as in previous studies, except that purchase intentions referred to soundbars for TVs to fit the context of the brand. Apart from the attitudinal measures, we also asked our participants to participate in Crescendi's crowdfunding for its new project on developing state-of-the-art Bluetooth earbuds. Participants were informed that if they were selected as a raffle winner to receive the extra $50, they could donate up to $10 of their award to Crescendi. Participants then selected the amount they would donate using a slider button that ranged from $0 to $10. We also measured participants' satisfaction with the speaker as a covariate using a single seven-point scale item (1 = "I am very unsatisfied with CR-i50," and 7 = "I am very satisfied with CR-i50").

Results

Brand preference and donation. Brand attitude ($\alpha = .94$) was analyzed in a one-way ANCOVA with product satisfaction as a covariate. The analysis revealed a significant positive effect of product satisfaction ($\beta = .61$, $F(1, 282) = 177.57$, $p < .01$, $\eta^2 = .39$). Most germane to our primary concern, contrasts revealed that brand attitude was lower in the upgrade condition ($M_{upgrade} = 3.01$) than in both the control condition ($M_{control} = 3.68$; $F(1, 281) = 11.99$, $p < .01$, $\eta^2 = .04$) and the upgrade-with-advice condition ($M_{upgrade\text{-}with\text{-}advice} = 3.62$; $F(1, 281) = 9.73$, $p < .01$, $\eta^2 = .03$). The upgrade and the upgrade-with-advice conditions did not differ significantly ($F(1, 281) = 0.07$, $p > .1$, $\eta^2 = .00$, Figure 7). For purchase intention, product satisfaction again had a significant positive effect ($\beta = .38$, $F(1,282) = 37.99$, $p < .01$, $\eta^2 = .12$). However, contrary to our prediction, purchase intention in the control condition ($M_{control} = 2.84$) did not differ significantly from that in the upgrade condition ($M_{upgrade} = 2.49$; $F(1, 281) = 1.60$, $p > .1$, $\eta^2 = .00$) and was different from that in the upgrade-with-advice condition only at the 10% alpha level ($M_{upgrade\text{-}with\text{-}advice} = 2.94$; $F(1, 281) = 3.06$, $p = .08$, $\eta^2 = .01$). Analysis of the donation amount again revealed a significant positive effect of product satisfaction ($\beta = 1.02$, $F(1,282) = 56.12$, $p < .01$, $\eta^2 = .17$): the donation was significantly lower in the upgrade condition ($M_{upgrade} = 3.01$) than in both the control condition ($M_{control} = 4.20$; $F(1, 281) = 4.31$, $p < .05$, $\eta^2 = .02$) and the upgrade-with-advice condition ($M_{upgrade\text{-}with\text{-}advice} = 4.41$; $F(1, 281) = 6.30$, $p < .05$, $\eta^2 = .02$). The donation amount in the control condition and the upgrade-with-advice condition did not differ ($F(1, 281) = 0.23$, $p > .1$, $\eta^2 = .00$). Not including the covariate in the models did not affect our results significantly.

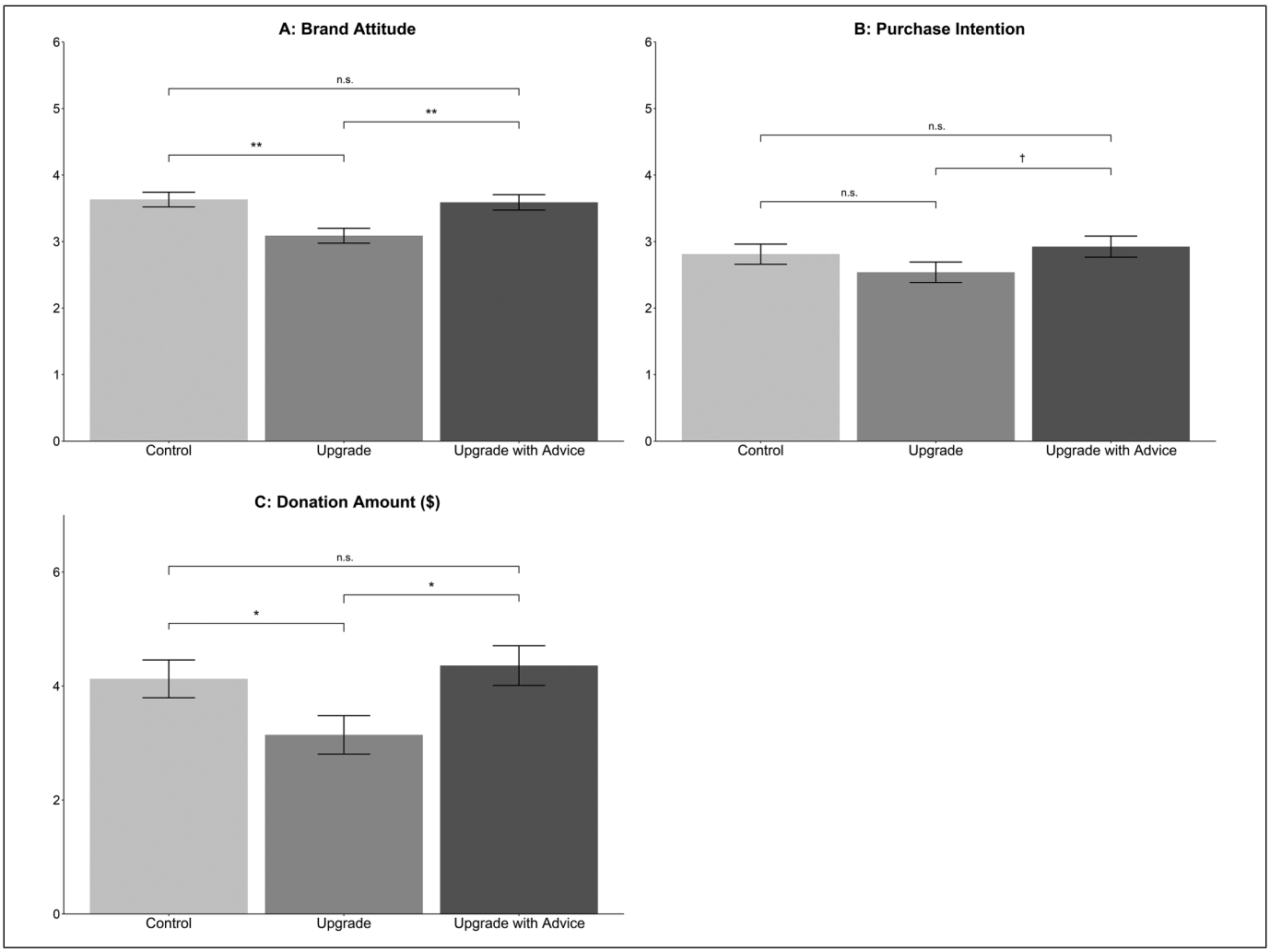

Figure 7. Effects of upgraded products on brand attitude, purchase intention, and donation.
†$p < .1$.
*$p < .05$.
**$p < .01$.
Notes: n.s. = not significant. The error bars represent standard errors.

Mediation through perceived relationship distance. The upgrade conditions were dummy coded into two groups: D1 (0 = upgrade vs. 1 = control) and D2 (0 = upgrade, 1 = upgrade with advice). The mediation analysis using 5,000 bootstrap samples revealed that the relative indirect effects of both D1 (.39, 95% CI = [.203, .582]) and D2 (.48, 95% CI = [.261, .702]) on brand attitude through perceived relationship distance were significant, indicating that the difference in the brand attitude was mediated by how close participants felt to the brand. The results for the donation amount followed a parallel pattern: the relative indirect effects of both D1 (.61, 95% CI = [.327, 1.00]) and D2 (.72, 95% CI = [.360, 1.27]) on the donation amount through perceived relationship distance were significant.

Discussion

Using actual ownership and a behavioral outcome, Study 4 sheds further light on the distinct effect that new upgrades could have on existing product owners. We replicate our primary finding illustrating the negative effect of product upgrades on owners, but we also identify a tactic for reducing the negative effect. We find that soliciting consumer advice is a potential strategy that managers could take to alleviate the negative impact of new upgrades as it provides a path for consumers to feel closer to the brand. We note that in Study 4 we did not obtain the expected effect for intention to purchase another product from the brand, a TV soundbar. In hindsight, we believe that this may have been the case because most undergraduate students living on campus do not possess their own TV and thus in general may not feel the need for a soundbar, as indicated by the relatively lower purchase intention across the conditions.

Study 5

The purpose of Study 5 is to test our hypothesis with secondary data on car ownership. Using multilevel modeling, we examine

how releases of newer generations of car models influence current consumers' brand preferences. In the automobile industry, car models are fully redesigned every three to six years. Through this cycle, newer models come with evident upgrades in terms of design, features, technology, and so forth that result in previous models falling behind the newer ones. We use car owners' brand switching behavior as a proxy for brand preference. The more upgrades a brand releases, the further from the current consumer it will be perceived to be. Thus, we predict that owners will be more likely to switch their brand as the number of newer car generations released since their purchase increases.

Data

Our analysis is based on data from 49,998 households across the United States. The data set comes from the publicly available 2017 National Household Travel Survey conducted by the U.S. Federal Highway Administration, which reports car ownership status of households across the United States. The data set includes the total number of cars owned by each household, as well as the model, brand name, and year of each car. The ownership data facilitated an examination of how each household's recent brand choice might have been affected by the presence of newer generations of the car model the household previously purchased. In the analysis, we focused our attention on each household's latest and second latest vehicles. For instance, we tested whether the household's brand choice (e.g., Honda) for its recent vehicle purchase (e.g., 2017 Accord) was affected by the number of newer generations released (e.g., three) by a brand (e.g., Ford) of the household's past vehicle (e.g., 2009 Fusion) during the time between the two purchases (e.g., between 2009 and 2017). Since the data are at the household level, we used the household as the unit of analysis and assumed that each household acts as a single decision maker. Also, we assumed that the model year is equivalent to the purchasing year, presuming that the households bought their cars new. We address these assumptions further in the discussion section.

We focused on households that owned at least one of 30 automotive brands that together account for more than 95% of market share in the United States.[7] We excluded households that reported to have purchased only one vehicle and also excluded households that purchased multiple vehicles in the same year as we cannot determine which vehicle was bought first. We then removed households that either did not report information on their previous vehicle (e.g., "I don't know"), did not specify the model (e.g., "Medium/Heavy Pickup"), or reported an incorrect model year (e.g., reporting a model year of 2002 when the vehicle went into production in 2008). After these exclusions, the data set consisted of 49,998 households whose ownership included 294 different car models from 30 brands.

[7] The data contained 40 automotive brands being owned as previous brands. Of the 40 brands, we excluded 10 that were defunct or had ceased to sell cars in the United States. These brands were Pontiac, Saturn, Oldsmobile, Mercury, Plymouth, Scion, Saab, Isuzu, Suzuki, and AM General.

Variables

Dependent variable. To infer brand preference, each household's brand switching in its latest car purchase served as a dependent variable. The brand switching was coded 0 if the household stayed with its previous brand and 1 if the household switched to another brand.

Focal predictor. The focal predictor was the number of newer generations of a household's previous car purchase released by the brand before the household made its next car purchase. We first collected model generation data for each of the 294 car models from the 30 brands. We then computed the number of newer generations of each household's previous car released between the two purchasing time points. For instance, if a household purchased a Ford Fusion in 2009 and then a Honda Accord in 2017, we computed the number of newer Fusion models that Ford released between 2009 and 2017. Ford released three redesigned versions of Fusion during that time span (in 2010, 2013, and 2017); therefore, the focal predictor for this household's subsequent brand choice was coded as 3.

Covariate. Brand loyalty was used as a covariate as it is one of the key dimensions that has a dominant impact on consumers' brand choices (Tellis 1988). To capture and control for the effect of each household's baseline loyalty toward its previous brand, we computed a loyalty index using each household's previous purchase records. Presuming that purchase frequency reflects brand loyalty (Tellis 1988), we computed the index as the proportion of car(s) each household owned from the previous brand to the total number of car(s) the household owned before purchasing the recent car. For instance, if a household owned three cars before purchasing the Honda in 2017, and if one out of the three was from Ford, then the loyalty index of this household for Ford was coded as 0.33.

Model Specification and Analysis

Testing our hypothesis required a methodology that accounts for a hierarchical structure of our data, in which the household-level observations (first level) are nested within different car models (second level), which in turn are nested within different brands (third level). This nested structure of the data violates the independence assumption of ordinary least squares estimations because observations are dependent on each other (e.g., owners of the same models or brands are likely to share similar characteristics). Because an ordinary least squares regression would have biased the estimates in this case, the use of a multilevel model that jointly considers the within- and between-group relationships was essential (Brauer and Curtin 2018; Raudenbush and Bryk 2002).

We used a multilevel logistic regression to analyze the data. The model was specified as follows (see Web Appendix E for the derivation of Equation 1):

$$\begin{aligned}\text{Switching}_{ijk} = {} & \gamma_{000} + \gamma_{100}(\text{Generation}_{ijk}) \\ & + \beta_{2jk}(\text{Loyalty}_{ijk}) + \mu_{0jk} \\ & + \mu_{1jk}(\text{Generation}_{ijk}) + \nu_{00k} \\ & + \nu_{10k}(\text{Generation}_{ijk}) + \varepsilon_{ijk}, \end{aligned} \quad (1)$$

where Switching_{ijk} represents the brand switching of household i owning car model j from brand k, equaling 0 if the household did not switch and 1 if the household switched; Generation_{ijk} is the number of newer generations of car model j released by brand k owned by household i in the year when a new car was purchased; Loyalty_{ijk} is a loyalty index capturing the baseline loyalty of household i owning car model j toward brand k in the year when a new car was purchased; and ε_{ijk} are first-level residuals.

In Equation 1, the fixed effects are represented by the γ values and β, and the random effects are represented by the μ and ν values. The two types of random effects from the second and third levels—the μ and ν values respectively—can be regarded as residuals at the group level that are left unexplained by our independent variables. Thus, the random effects together with the first-level residual ε cumulatively reflect the total variance in the dependent variable. The γ_{100} is the coefficient of interest that tests our hypothesis, and the random effects enable us to control for between-model and between-brand effects by allowing the respective intercept and slope to vary by each model and brand. All the independent variables were centered on the grand mean.

Results

The model was estimated using the lme4 package (Bates et al. 2015) in R (see Table 3). As shown in the top panel of Table 3, the fixed-effect coefficients were significant (see Web Appendix E for random-effect interpretations). First, the positive γ_{100} confirmed our hypothesis that as the number of newer generations of car models increased, owners of the models became more likely to switch to different brands ($\gamma_{100} = .095$, SE = .032, $p < .01$). As indicated by the corresponding odds ratio, the odds of owners switching to another brand increased by a factor of 1.099 for every newer generation of the model that the brand introduced. Consistent with previous research, owners' baseline loyalty toward the brand significantly reduced the log-odds of switching ($\beta_{2jk} = -.499$, SE = .046, $p < .01$). Figure 8 depicts the predicted probability of brand switching as a function of the number of newer generations released.

Discussion

In Study 5, we tested our hypothesis using real-world secondary data on car ownership. Through a multilevel analysis, we show that the release of newer generations of a car model increases the probability of brand switching for consumers who own the previous versions of the model. This result supplements our experimental findings and further bolsters our proposition that introducing upgraded products may inadvertently and negatively influence current consumers' brand preference.

While the results are consistent with our prediction, we acknowledge the limitations of our data. First, because the data were provided at the household level, we assumed that each household acts as a single decision maker. Although the household has been used as a decision-making unit in previous

Table 3. Multilevel Logistic Regression Results.

	Coefficients in			
Fixed Effects	**Log-Odd**	**Odds Ratio (for a One-Unit Increase)**	**SE**	**z-Stat.**
γ_{000} = Intercept	−1.919	6.815	.131	14.598**
γ_{100} = Coefficient of generation	−.095	1.099	.032	2.943**
β_{2jk} = Coefficient of loyalty	−.499	.607	.046	−10.778**
Random Effects	**Variance Components**		**SE**	
Third-level (brand) random effects				
Var(ν_{00k})	−.449		.670	
Var(ν_{10k})	−.002		.050	
Corr(ν_{00k}, ν_{10k})	−.611			
Second-level (model) random effects				
Var(μ_{0jk})	.054		.233	
Var(μ_{1jk})	−.007		.082	
Corr(μ_{0jk}, μ_{1jk})	−.499			
Deviance	52,990.2			

**$p < .01$.

Notes: The χ^2 fit comparison tests showed that the current model fits better than the model without the covariate (all $p < .01$). The effect of the focal predictor remained significant even without the covariate in the model.

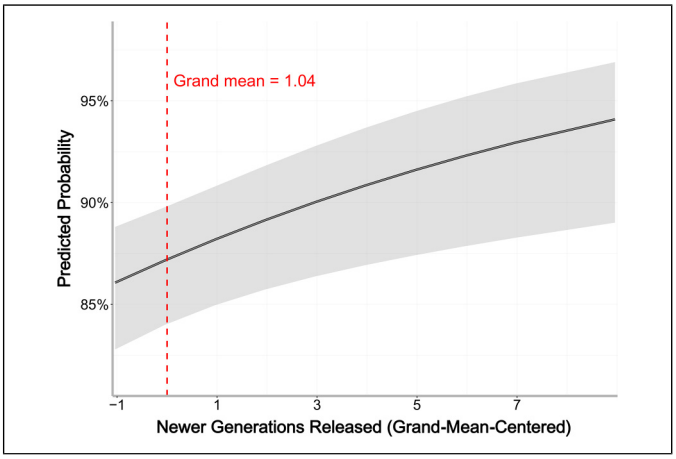

Figure 8. Fixed effect of generation on switching probability.

research (Jain and Vilcassim 1991), decision making at the household level may not necessarily correlate with individual consumer-level choices. Second, since the data do not provide information about when the car was purchased, we assumed that the households bought their cars new. We can, however, relax this assumption. Because new generations, according to our data, are introduced every five years on average, our analysis should hold for cars purchased in the same year they are released as well as for cars purchased as used in the following four years. The fact that the assumption may not hold for the entire data set puts some limitations on our analysis, but we note that this works against our ability to detect the predicted effect.

General Discussion

Releasing product upgrades has become a very common product strategy, especially in categories that make significant use of technological advances. Product upgrades provide new and better options to consumers and showcase the firm's capabilities. It seems intuitive that these launches would benefit the brand. Indeed, previous research has shown that adding a premium model to the brand portfolio leads to more favorable perceptions from consumers (Heath, DelVecchio, and McCarthy 2011; Janiszewski and Van Osselaer 2000). Our findings qualify previous results by showing that while this effect holds for nonowners, the reverse can be true for product owners.

Theoretical Implications

Our results may seem at odds with previous research (Kirmani, Sood, and Bridges 1999), but we demonstrate a new finding that is not incompatible with other findings. Despite the negative effect of an upgrade on current brand owners, attitudes of brand owners remain more positive than attitudes of nonowners. Although attitudes of nonowners shift upward and attitudes of owners shift downward, the latter remain more positive than the former. If we were to only measure brand preference among owners and nonowners after an upgrade, we would see that owners are more positive than nonowners, and we could erroneously conclude that upgrades have a more positive impact on owners than on nonowners.

We demonstrate that one factor that drives the unfavorable response of owners to product upgrades is the perceived distance from the brand as the brand moves forward with the new enhancements while consumers are still using the previous product. This situation leads to a decrease in brand preference (Studies 1–4). We also identify boundary effects whereby providing an additional source of connection to the brand either through a shared identity (Study 3) or by having owners give advice to the company (Study 4) eliminated the negative effects that upgrades may have on current product owners. These results highlight the importance of marketing to existing consumers to ensure that they feel connected to the brand. We find that simply owning a product improves brand attitudes (Beggan 1992; Belk 1988; Kirmani, Sood, and Bridges 1999), but this connection may be harmed by a product upgrade. A brand that forms multiple connections to consumers should be more protected from this negative effect.

While the present research focuses on the role of perceived relationship distance between consumers and the brand, we acknowledge that alternative or complementary mechanisms may co-occur and have sought to address some potential alternatives in our studies. Specifically, we ruled out a desire for current technology (Study 1), the frequency of upgrades (Study 3 and Web Appendix D), and satisfaction with the current product (Study 4).

Our findings contribute to the growing literature on product upgrades (Bellezza, Ackerman, and Gino 2017; Dagogo-Jack and Forehand 2018; Okada 2001, 2006; Sela and LeBoeuf 2017; Wang and John 2019). Whereas previous research has documented triggers and facilitators of consumers' decisions to purchase an upgraded product, we examine how the mere presence of upgrades affects brand preferences more broadly, including the decision to purchase the brand's product in another category. Furthermore, we extend previous work on the ownership effect (Beggan 1992; Kirmani, Sood, and Bridges 1999; Peck and Shu 2009; Shu and Peck 2011) by identifying a context in which the effect could be mitigated. Whereas research has primarily demonstrated a favorable response of owners to what they own, we show that when the brand launches an upgrade, the net effect of the upgrade can become negative for brand owners but positive for nonowners, thereby attenuating the owners' positive bias toward their brand.

An extensive literature has investigated factors influencing consumer–brand relationships (Aaker, Fournier, and Brasel 2004; Aggarwal 2004; Escalas and Bettman 2005; Fournier 1998; Thomson, MacInnis, and Park 2005). We add to this literature by showing that consumers' product ownership status can be an important factor in understanding how consumers perceive the interpersonal aspects of using their brand when the brand introduces upgraded products. Previous research demonstrates that product ownership establishes a consumer–brand relationship that can engender commitment toward the brand in consumers (Fournier 1998; Park, Eisingerich, and Park 2013; Thomson, MacInnis, and Park 2005). We find, however, that the very ownership of the product that forms the initial relationship between consumers and the brand can work against the brand when the brand advances forward with upgraded products. The attenuation in owners' brand preference after an upgrade illustrates how a brand's seemingly beneficial effort to provide a better consumer experience can inadvertently jeopardize how consumers perceive the brand.

Managerial Implications

Our research offers important implications for marketing managers. One of the major objectives of product upgrades is to expand the appeal of brands to both their new and current consumers. However, we show that while the launching of an upgraded product can certainly appeal to the brand's new

consumers, it can inadvertently alienate the current consumers. As we demonstrate, the probability of maintaining the current consumers' preference for the brand depends on the degree of personal connection they experience with the brand. Therefore, to lessen the negative influence of the new upgrade, managers may implement strategies that reinforce the relationship between the brand and its existing consumers in the event of new upgrade launches. This could be done by offering extra sources of connection or opportunities for the consumers to feel personally connected to the brand.

One such strategy to enhance the consumer–brand connection could be to provide existing consumers with exclusive offers, such as a special promotion that applies to the consumers if they decide to purchase the new upgrades. The special offer to existing brand owners could engender a feeling of exclusiveness that could increase the connectedness to the brand, which, in turn, could reduce the negative effect of the new upgrade on brand preference. Another potential strategy could be to offer trade-ins (Okada 2001) whenever the brand launches an upgrade product, allowing the consumers to trade in their existing product as partial payment for new purchases. The trade-in is another form of exclusive opportunity available only to existing consumers and thus could increase the sense of connectedness to the brand. Managing and utilizing brand community (Muniz and O'Guinn 2001) may also be an effective measure to dampen the negative influence of new upgrades. Fostering a strong brand community would consolidate the relationship between the brand and its existing consumers, who thus can develop an entrenched loyalty and brand commitment (Keller 2020; Muniz and O'Guinn 2001).

Importantly, our findings can be informative to brands that offer products in multiple product categories. We show that the negative effect of a new upgrade launch in one product category also influences the intention to purchase a product from another category. Although we did not measure intention to purchase the upgraded product as the design of our studies precluded this measurement, the findings demonstrate that the negative effect of the upgrade launch can spill over to different product categories.

We illustrate an unintended consequence of product upgrades among current owners. However, we are cautious in making claims regarding how the upgrades may ultimately affect consumers in the long term. Whether product upgrades negatively or positively influence consumers' long-term brand preference can depend on the overall quality of consumers' experience with their products and brands. While the negative reactions of current owners may persist and decrease the likelihood of a cross-category purchase from the same brand, they may also subside if the new upgrades are deemed valuable in the long run and provide the consumers with added utility.

Future Research

This work opens several avenues for future research. The unfavorable response of the owners to the new upgrade comes from the feeling that the brand is moving away from them, creating distance from the brand that is involuntary. Future research might examine the nature of the gap and investigate whether a relational gap voluntarily created by consumers (e.g., consumers choosing to downgrade) also negatively affects brand preference. Similarly, brands often launch downgraded products to reach new consumer segments. Would the launch of a downgraded product influence consumers who own an existing version of the product? Our theory suggests that launching a downgraded product may have a null effect on the existing consumers' preference because the highest-end product from the brand (according to which the owners perceive the brand's distance from the self) remains unchanged.

Another direction for future research is to examine alternative mechanisms that may co-occur with changes in perceived relationship distance. Owners may have utilitarian reasons to respond negatively to new upgrades. For example, owners may feel a financial loss because their current product is still fully functional but is now outmoded by the upgrade. Although we still observe the negative reaction in Study 4 when the product was given to participants free of charge, part of the feeling of being shortchanged or being treated unfairly reported in our pilot study may be attributed to this feeling of financial loss, ultimately producing a negative reaction toward the brand. Apart from the utilitarian reaction, an affective reaction may also play a role in owners' responses to product upgrades. Anger or even sadness may manifest as owners perceive the brand moving away from them. Consumers' sense of self may be threatened by the perceived distance. Identifying the affective components of owners' reactions could be enlightening.

Future work could also examine other potential boundary conditions moderating the owners' unfavorable response to the launch of an upgrade. One factor could be the strength of an association between the brand and the focal product category being upgraded. In our studies, we focused on product categories that are strongly associated with the brands (e.g., iPhones for Apple, tablet computers for an electronics brand, cameras for a camera brand, cars for an automobile brand). Would consumer preferences be influenced by the launching of an upgrade in categories that are less relevant to the brand? It is possible that upgrades occurring in categories less strongly associated with the brand may not have a significant influence on the brand preference of consumers who own an existing product from that category. With many areas to explore, we hope that our work inspires future research to enrich the understanding of how consumers respond to brands' launching of new upgrades.

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