

Anthropomorphizing makes material goods as happiness-inducing as experiences

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Abstract

Prior research suggests that material goods (e.g., electronic gadgets) often provide less happiness than do experiences (e.g., movies). As a boundary condition, the present research proposes a theory-based yet actionable solution to overcome the happiness disadvantage of material goods. Three studies show that when material goods are anthropomorphized (i.e., imbued with humanlike characteristics), consumers gain enhanced feelings of consumption sociality and, in turn, derive a boost in happiness such that they gain as much happiness from these material goods as from experiences. With mediation and moderation approaches, we provide process evidence for these enhanced feelings of consumption sociality that are typically lacking with material purchases, which are prone to being consumed alone rather than with other people. Thus, the present research suggests that even in the absence of other people, consumers can gain greater happiness from their material goods by perceiving them as human.

Keywords Material purchases · Experiential purchases · Anthropomorphism · Happiness · Material disadvantage

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1 Introduction

A decade of research comparing purchase types largely found that experiential purchases (i.e., those made with the intention of having a life experience, e.g., attending a concert) provide greater happiness than material purchases (i.e., those made with the intention of ownership, e.g., electronic gadgets) (Gilovich et al. 2015; Van Boven and Gilovich 2003). Besides encouraging experiential consumption, is there a way for companies to increase consumer welfare when consumers consume material purchases? Although researchers have recently begun to explore boundary conditions for the happiness disadvantage with material purchases (e.g., Lee et al. 2018), research is lacking on how companies selling material purchases can increase the happiness consumers feel when consuming material purchases.

As a boundary condition to the material disadvantage, we propose that anthropomorphizing material purchases (i.e., imbuing material purchases with humanlike characteristics; Aggarwal and McGill 2007; Kim and McGill 2011) can boost the happiness derived from material purchases so that consumers are just as happy with them as they are with experiential purchases. Prior research shows that people often anthropomorphize various non-human entities such as brands (e.g., "Play with Oreo"; Puzakova et al. 2013); abstract concepts (e.g., "mother nature"; Tam et al. 2013); and consumer products (e.g., giving a human name to one's car; Epley et al. 2008). One key characteristic of anthropomorphized products is that although they are not real humans, people tend to interact with them as if they were (Aggarwal and McGill 2007; Epley et al. 2008; Puzakova et al. 2013).

Extending this anthropomorphism literature, we propose *feelings of consumption sociality* as the key mechanism to overcome the material disadvantage by anthropomorphizing material purchases. Prior work provides evidence that interacting with or possessing anthropomorphized products can alleviate the negative effects of a lack of sociality. For example, when social needs (e.g., feelings of rejection) are heightened, people increase the motivation to anthropomorphize non-human entities or display a stronger preference for anthropomorphized brands than non-anthropomorphized ones (Chen et al. 2017; Epley et al. 2008). In addition, when people are socially excluded, interacting with anthropomorphized products mitigates their compensatory behaviors (Mourey et al. 2017). Thus, we argue that anthropomorphizing material purchases can increase feelings of consumption sociality without having actual people in the consumption context.

We further propose that the enhanced feelings of sociality can allow consumers to derive as much happiness from material purchases as they do from experiential purchases. Indeed, prior literature found that a critical driver for the disadvantage of material purchases in happiness is associated with the contexts in which the purchases are typically consumed. Extant research has shown that experiential purchases (e.g., movies and eating at restaurants) are naturally and typically consumed socially, with other people, whereas material goods (e.g., mobile phones and televisions) are most often consumed alone rather than with others (Caprariello and Reis 2013; Howell and Hill 2009). Although some material purchases can occasionally be consumed socially (e.g., using an outdoor grill to host a barbeque for friends), prior work supports that constant or frequent social consumption of material purchases will be difficult because material purchases are naturally more likely to be consumed in solitary rather than in



social contexts (Caprariello and Reis 2013; Guevarra and Howell 2015; Huang et al. 2016; Sommer 2009).

Because sociality is a critical driver of happiness (Baumeister and Leary 1995; Ryan and Deci 2000), the systematic lack of consumption sociality has been consistently linked to the material disadvantage in happiness (Caprariello and Reis 2013; Howell and Hill 2009). Indeed, past research showed that the material disadvantage disappears in the rare instances in which experiential purchases are consumed alone or material purchases are consumed with other people (Caprariello and Reis 2013). Therefore, integrating the literature on purchase type, anthropomorphism, and purchase happiness, we propose that anthropomorphizing can overcome the material disadvantage in happiness by enhancing consumption sociality, a feature that is typically lacking with material purchases.

Hypothesis 1: Anthropomorphizing material purchases increases purchase happiness, thereby reducing the difference in happiness between regular (non-anthropomorphized) material purchases and experiential purchases.

Hypothesis 2: Perceived consumption sociality mediates the positive effect of anthropomorphizing material purchases on purchase happiness.

We also suggest that if the underlying mechanism for the happiness-boosting effect of anthropomorphizing material purchases is indeed mediated by perceived sociality, then in situations when anthropomorphizing material purchases does not enhance perceived sociality, anthropomorphizing material purchases will not increase happiness.

Hypothesis 3: In the absence of perceived consumption sociality, the positive effect of anthropomorphizing material purchases in happiness will be attenuated.

Two pilot studies (reported in the Supplemental Material File) conducted in a lab and online provided initial evidence of our predictions. The pilot studies showed that anthropomorphizing a purchase framed in material terms increased its happiness, reducing the difference in happiness between purchases with a material framing and those with an experiential framing. Study 1 tested the anthropomorphism effects with various purchases participants recalled. Study 1 also provided process evidence involving consumption sociality with a mediation analysis. Study 2 showed that the happiness-boosting effect of anthropomorphizing does not occur with experiential purchases, which are already equipped with consumption sociality. Study 3 provided causal evidence for the mechanism by manipulating the proposed mediator (i.e., perceived sociality) and showed a boundary condition of the anthropomorphism effect.

2 Study 1

Study 1 involved comparing the happiness derived from various past purchases that participants recalled as experiential, material, or anthropomorphized material. This study also entailed examining a mediating role of perceived sociality.



2.1 Method

A power analysis based on the effect size of the pilot study ($\eta_p^2=0.05$, reported in the Supplemental Material File) indicated that a minimum of approximately 270 participants would be needed to obtain 0.80 power. Therefore, we decided to collect data from 300 participants on Prolific. Two hundred ninety-seven participants (65% female, $M_{\rm age}=33.22$, SD=10.42) completed the study. As in the study by Van Boven and Gilovich (2003), participants recalled either an experiential purchase or a material purchase depending on the condition after reading a definition of the designated purchase type. We also employed an additional condition in which participants recalled a material purchase to which they had imposed humanlike characteristics or that had anthropomorphic cues in its design (Aggarwal and McGill 2007; Epley et al. 2008).

Next, participants indicated the level of happiness that was induced by their purchase (i.e., "When you think about the purchase, how happy does it make you?" 1 = not at all, 7 = very much), perceived consumption sociality with five items (e.g., "To what extent does the purchase make you feel..."; 1 = extremely social; "I feel like I have company because of this purchase"; 1 = not at all, 7 = very much; adapted from Caprariello and Reis 2013 and Russell et al. 1980; $\alpha = .84$), the price of the purchase, time (months) elapsed since purchase, and the category of the purchase (coded into one of the eleven categories, e.g., "Cell phones and cameras", "Travels"). All materials, as well as questions, are reported in the Supplemental Material File.

2.2 Results

Two hundred ninety-two participants (64% female, $M_{\rm age} = 33.25$, SD = 10.48) remained in the final data analyses after we excluded five participants who did not identify a purchase in the recall task (e.g., "Nothing," or "This sounds a bit silly").

2.2.1 Purchase happiness

A one-way ANOVA revealed that happiness differed by purchase type, F(2, 289) = 5.32, p = .005, $\eta_p^2 = 0.04$. Replicating the material disadvantage effect shown in prior work (Van Boven and Gilovich 2003), material purchases (M = 5.89, SD = 1.20) provided less happiness than experiential purchases (M = 6.36, SD = 0.92), t(289) = -3.20, p = .002, d = -0.44. However, anthropomorphized material purchases (M = 6.19, SD = 0.94) provided greater happiness than material purchases (M = 5.89, SD = 1.20), t(289) = 1.98, p = .049, d = 0.28, and as much happiness as experiential purchases (M = 6.36, SD = 0.92), t(289) = -1.07, p = .284, d = -0.18, supporting Hypothesis 1. The results were consistent when we controlled for the price (USD) of the recalled purchase (F(2, 288) = 5.15, p = .006, $\eta_p^2 = 0.04$) and time (months) elapsed since the purchase (F(2, 281) = 5.48, p = .005, $\eta_p^2 = 0.04$).

¹ The data from seven participants were missing for this item.



2.2.2 Perceived sociality

A one-way ANOVA revealed that perceived sociality differed by purchase type, F(2, 289) = 8.03, p < .001, $\eta_p^2 = 0.05$. As we predicted, material purchases (M = 3.79, SD = 1.44) provided less perceived sociality than experiential purchases (M = 4.50, SD = 1.39), t(289) = -3.67, p < .001, d = -0.50. More importantly, anthropomorphized material purchases (M = 4.41, SD = 1.33) provided greater sociality perception than material purchases (M = 3.79, SD = 1.44), t(289) = 3.07, p = .002, d = 0.45, and as much sociality perception as experiential purchases (M = 4.50, SD = 1.39), t(289) = -0.46, p = .646, d = -0.07.

2.2.3 Mediation analysis

To test the mediating role of perceived sociality, we conducted a bootstrap analysis (model 4, with 10,000 bootstrapped samples; Hayes and Preacher 2014; Fig. 1). Between experiential and material purchases, perceived sociality mediated the effect of purchase type on perceived happiness, consistent with prior work (Caprariello and Reis 2013), b = 0.15, SE = 0.05, 95% CI = [0.06, 0.26]. Then, between anthropomorphized material and regular material purchases, perceived sociality also mediated the effect of purchase type on perceived happiness, b = 0.13, SE = 0.05, 95% CI = [0.04, 0.25]. This shows that anthropomorphizing material purchases enhanced the perceived sociality of material purchases, and in turn boosted happiness, supporting Hypothesis 2.

2.3 Discussion

Study 1 supported the predicted anthropomorphism effects with various past purchases that participants recalled. The material disadvantage in happiness (compared to that from experiential purchases) in prior work emerged, but it was eliminated with anthropomorphized material purchases in that these were associated with greater perceived sociality. Thus, anthropomorphized material purchases brought greater happiness to participants compared to regular material purchases.

3 Study 2

Study 2 replicated the results of study 1 by manipulating the purchase type of a single purchase (i.e., a grill). In addition, we added a condition in which an experiential purchase is anthropomorphized. We predicted that the happiness-boosting effect of anthropomorphizing would emerge only with material purchases. Specifically, we predicted that anthropomorphizing an experiential purchase would not enhance happiness because experiential purchases are already equipped with perceived sociality.

3.1 Method

A power analysis based on the effect size of the pilot study and study 1 indicated that a minimum of approximately 300 participants would be needed to obtain 0.80 power. Three



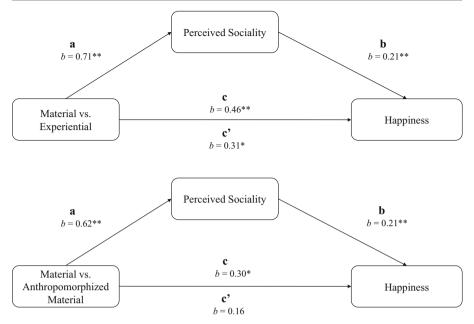


Fig. 1 Results of study 1: Mediation analyses via perceived sociality for the effects of purchase type on happiness (**p < .01; *p < .05)

hundred eighty male adults ($M_{\rm age} = 37.82$, SD = 11.97) from MTurk completed the study in exchange for a small monetary payment. Note that in this study we only recruited male participants because, according to a large national survey conducted in the USA, men are twice as likely as women to be the primary griller in the family (www.applegate.com).

3.1.1 Purchase type and anthropomorphism manipulation

Adapting Tully and Sharma's (2018) process, we framed a grill as either a material, an experiential, an anthropomorphized-material, or an anthropomorphized-experiential purchase (see the Supplemental Material File).

3.1.2 Measures

First, we measured perceived happiness (e.g., "If you purchase this grill, to what extent do you think this grill will make your life happier?" 1 = not at all, 7 = very much; $\alpha = .87$). Also, as in study 1, we measured the perceived sociality associated with the grill using five items (e.g., "If you purchase this grill, to what extent do you think having this grill will make you feel solitary or social?" 1 = extremely solitary, 7 = extremely social; $\alpha = .90$).

3.2 Results

3.2.1 Perceived happiness

A 2 (anthropomorphism: yes vs. no) × 2 (purchase type framing: material vs. experiential) ANOVA on perceived happiness revealed a significant main effect of



anthropomorphism, F(1, 376) = 5.13, p = .024, $\eta_p^2 = 0.01$; a non-significant main effect of purchase type, F(1, 376) = 1.41, p = .235, $\eta_p^2 < 0.01$; and, more importantly, a significant interaction, F(1, 376) = 5.21, p = .023, $\eta_p^2 = 0.01$ (Fig. 2). Planned contrasts showed that participants perceived a lower level of happiness from the material grill (M = 4.33, SD = 1.58) than from the experiential grill (M = 4.83, SD = 1.30), t(376) = -2.52, p = .012, d = -0.35, replicating prior work (Van Boven and Gilovich 2003) and our previous findings. More notably, the happiness derived from the anthropomorphized material grill (M = 4.98, SD = 1.49) was significantly greater than that from the material grill (M = 4.33, SD = 1.58), t(376) = 3.30, p = .001, d = 0.42). It was also not significantly different from that from the experiential grill (M = 4.83, SD = 1.30), t(376) = 0.77, p = .444, d = 0.11, supporting Hypothesis 1; however, this happiness-boosting effect did not occur with the experiential grill. The happiness derived from the anthropomorphized experiential grill (M = 4.83, SD = 1.20) was not significantly different from that from the experiential grill (M = 4.83, SD = 1.30), t(376) = -0.01, p = .990, d < 0.001.

3.2.2 Perceived sociality

A two-way ANOVA on perceived sociality revealed a significant main effect of anthropomorphism, F(1, 376) = 11.92, p = .001, $\eta_p^2 = 0.03$; a significant main effect of purchase type, F(1, 376) = 7.61, p = .006, $\eta_p^2 = 0.02$; and a significant interaction, F(1, 376) = 3.94, p = .048, $\eta_p^2 = 0.01$. Planned contrasts indicated that, as shown by Caprariello and Reis (2013), the perceived sociality from the purchase was lower with the material grill (M = 3.28, SD = 1.46) than with the experiential grill (M = 3.97, SD = 1.34), t(376) = -3.44, p = .001, d = -0.49. More importantly, the perceived sociality of the anthropomorphized material grill (M = 4.07, SD = 1.55) was greater than that of the material grill (M = 3.28, SD = 1.46), t(376) = 3.92, p < .001, d = 0.52, and it was not significantly different from that of the experiential grill (M = 3.97, SD = 1.34), t(376) = 1.34.

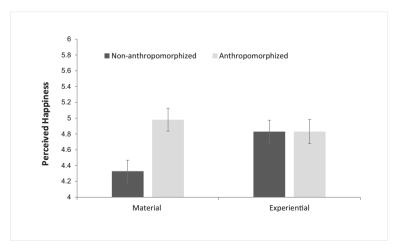


Fig. 2 Results of study 2: Anticipated happiness derived from the grill framed as different purchase types. Error bars represent the standard error of the mean



0.49, p = .622, d = 0.07. However, the perceived sociality of the anthropomorphized experiential grill (M = 4.18, SD = 1.25) was not significantly different from that of the experiential grill (M = 3.97, SD = 1.34), t(376) = 1.02, p = .310, d = 0.16. This was probably because the experiential grill was already imbued with perceived sociality, which is in line with our theorization.

3.2.3 Moderated mediation analysis

A moderated mediation analysis (model 7, Hayes and Preacher 2014) with perceived sociality as the mediator and product type framing as the moderator revealed that the indirect effect of the interaction between purchase type framing and anthropomorphism on perceived happiness through perceived sociality was significant, b = -0.32, SE = 0.16, 95% CI = [-0.63, -0.01]. Specifically, as expected, the indirect effect of anthropomorphism on perceived happiness through perceived sociality was significant for the material framing, b = 0.43, SE = 0.12, 95% CI = [0.20, 0.69], but not for the experiential framing, b = 0.12, SE = 0.11, 95% CI = [-0.09, 0.33].

3.3 Discussion

Study 2 replicated the happiness-boosting effect of anthropomorphizing material purchases by using the same product across all conditions, thus controlling for the purchase category. In addition, consistent with our mechanism, we showed that anthropomorphizing boosts the happiness derived from purchases framed in material terms but not from those framed as experiences because anthropomorphizing enhanced the perceived sociality of material purchases to the greater extent than that of experiential purchases.

4 Study 3

Study 3 provides evidence of a causal role of perceived sociality by directly manipulating perceived sociality. We predicted that the happiness-boosting effect of anthropomorphizing would emerge only when anthropomorphism enhanced perceived sociality. When anthropomorphizing a material purchase did not enhance perceived sociality, we predicted that happiness would not increase. As an additional dependent variable, we also measured consumers' purchase intention in this study.

4.1 Method

A power analysis based on the effect size of the pilot study and study 1 indicated that a minimum of approximately 300 participants would be needed to obtain 0.80 power. Three hundred thirty-two adults (46% female, $M_{\rm age} = 35.97$, SD = 11.59) from MTurk completed the study. As planned prior to the data collection and following the practice in prior work (Park and Kim 2015), we excluded 39 participants who failed manipulation checks from the final data analyses, leaving 293 participants (46% female, $M_{\rm age} = 35.83$, SD = 11.51) in the final data set. In the material and experiential purchase conditions, an image of a non-anthropomorphized speaker was provided. In the two anthropomorphized material purchase conditions, different images of an



anthropomorphized speaker were used to manipulate perceived sociality: anthropomorphized with eyes open (social anthropomorphized material purchase) or anthropomorphized with eyes closed and listening to music (non-social anthropomorphized material purchase; Fig. 3). A pretest showed that the images used in the anthropomorphized conditions differed in perceived sociality as intended but did not differ in other aspects (i.e., perceived quality of design and mood evoked by the speaker).

Participants indicated their happiness (e.g., "If you purchase this speaker, how happy do you think this speaker will make you?"; "If you purchase this speaker, to what extent do you think this speaker will make your life happier?"; $1 = not \ at \ all$, $7 = very \ much$; $\alpha = .89$) and purchase intention (i.e., "How interested are you in purchasing this speaker?"; $1 = not \ at \ all$, $7 = very \ much$).

4.2 Results

4.2.1 Purchase happiness

As hypothesized, a one-way ANOVA showed that the effect of purchase framing on perceived happiness was significant, F(3, 289) = 3.92, p = .009, $\eta_p^2 = 0.04$ (Fig. 4). As in the previous studies, the material speaker (M = 4.58, SD = 1.31) provided less happiness than the experiential speaker (M = 5.12, SD = 1.09), t(289) = -2.67, p = .008, d = -0.45. However, the social anthropomorphized material speaker (M = 5.07, SD = .008), t(M = 0.45).

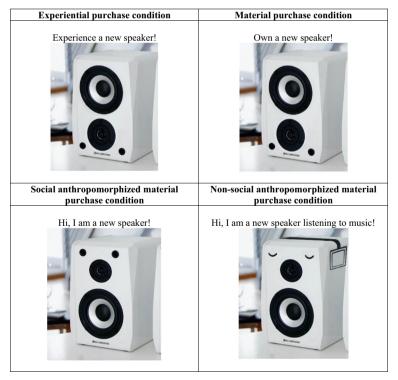


Fig. 3 Speaker images used in study 3. Detailed ad copies and experiment instructions are reported in the Supplemental Material File



1.19) provided greater happiness than the material speaker (M = 4.58, SD = 1.31), t(289) = 2.42, p = .016, d = 0.39, and as much happiness as the experiential speaker (M = 5.12, SD = 1.09), t(289) = -0.24, p = .810, d = -0.04. Also as predicted, and supporting Hypothesis 3, the non-social anthropomorphized material speaker (M = 4.63, SD = 1.31) was less effective in boosting happiness. It provided a similar level of happiness as the material speaker (M = 4.58, SD = 1.31), t(289) = 0.27, p = .790, d = 0.04, but less happiness than both the social anthropomorphized material speaker (M = 5.07, SD = 1.19), t(289) = -2.15, p = .032, d = -0.35, and the experiential speaker (M = 5.12, SD = 1.09), t(289) = -2.40, p = .017, d = -0.41.

In addition, findings with regard to purchase intention yielded a pattern of results that mirrored our findings on happiness (reported in the Supplemental Material File).

4.3 Discussion

Supporting the causal role of perceived sociality in promoting happiness, study 3 used a moderating approach and manipulated the perceived sociality of the anthropomorphized product. As in previous studies, the material disadvantage decreased when participants anthropomorphized the material purchase with social design features; however, as anticipated, the material disadvantage did not decrease when participants anthropomorphized the material purchase with non-social design features. As an additional dependent variable, study 3 showed that the same patterns of anthropomorphism effects emerge with the consumers' purchase intention. This increases the generalizability of our anthropomorphism effects.

5 General discussion

How can firms make consumers happier with material purchases? Exploring how to overcome the disadvantage in happiness associated with material purchases (compared

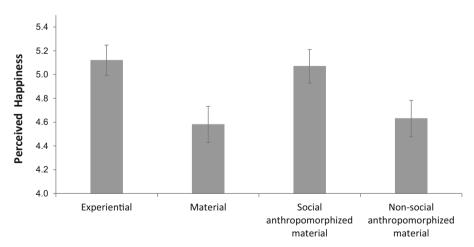


Fig. 4 Results of study 3: Anticipated happiness derived from the speaker framed as different purchase types. Error bars represent the standard error of the mean



to experiential purchases; Gilovich et al. 2015; Van Boven and Gilovich 2003), we tested a boundary condition that suggested a novel, theory-based, yet easily actionable solution: anthropomorphizing material purchases. Material purchases systematically lack a critical happiness driver of consumption sociality because they are prone to solitary rather than social consumption (Caprariello and Reis 2013; Howell and Hill 2009). However, our two pilot studies and three main studies showed that by treating and interacting with material purchases as if they are humans, people can achieve greater happiness from them. Anthropomorphizing material purchases allowed consumers to overcome the disadvantage in happiness compared with happiness from experiential purchases. Our key mechanism involving perceived sociality was supported with mediation (studies 1 and 2) and moderation (study 3) approaches. Additionally, we measured purchase happiness in terms of both actual consumption (two pilot studies and study 1) and anticipated consumption (studies 2 and 3), which are related but conceptually distinctive.

The present research contributes to the literature comparing experiential and material purchases (e.g., Bastos and Brucks 2017; Carter and Gilovich 2012; Gilovich et al. 2015) by showing that anthropomorphizing material purchases can effectively overcome the happiness disadvantage with material purchases. This solution can be actively implemented in typical solo consumption contexts with marketing communications. Our findings also contribute to the literature on anthropomorphism. Building on prior explorations of relationships between heightened social needs and a preference for anthropomorphized products (Chen et al. 2017; Mourey et al. 2017), we showed that anthropomorphizing *material* but not necessarily experiential purchases can enhance perceived sociality and, in turn, boost the happiness derived from the purchases. Prior research investigated the role of anthropomorphism as a consequence of a heightened need for social assurance (e.g., due to social exclusion). However, in this research, we view the role of anthropomorphism as an actionable cause variable that can significantly influence happiness.

Our research provides several practical implications. To increase consumption happiness, marketers and practitioners can encourage consumers to anthropomorphize their material purchases; to ease the process, product designers can incorporate more humanlike features into their product designs (e.g., a human face, voice, or name). Finally, product designers should note that anthropomorphizing does not always increase the happiness derived from purchasing material goods; to do so, it must enhance perceived sociality. Thus, product designers should be mindful that the anthropomorphic features of the product should be social (thereby enhancing consumption sociality) rather than non-social or antisocial.

It should be noted that anthropomorphizing material purchases is conceptually different from experientializing material purchases or social consumption. Unlike the effects of social consumption found by Caprariello and Reis (2013), our anthropomorphism manipulations do not involve interactions with other people. Compared with the methods by Carter and Gilovich (2010, 2012), our manipulations offer actionable implications for marketers and product designers to increase happiness from material purchases. Future research needs to further disentangle the conceptual distinctions and empirical effects of anthropomorphizing versus describing material goods in experiential terms. For instance, consumers might want to tell others about their anthropomorphized purchases more than about non-anthropomorphized ones (Bastos and Brucks



2017; Kumar and Gilovich 2015), and this word-of-mouth can additionally contribute to the social benefits they derive, and in turn enhance consumer welfare. As this aspect of anthropomorphism could be an additional source of the happiness derived from anthropomorphized material products, future research should empirically test this possibility.

Our data showed that unlike experientializing, anthropomorphizing material purchases allows them to remain to be perceived as material purchases rather than experiential purchases. Thus, anthropomorphizing material purchases may still allow consumers to enjoy the unique benefits and features of material purchases (e.g., more frequent and longer periods of consumption, Tully et al. 2015; Weidman and Dunn 2016) as well as those of anthropomorphizing products (e.g., feeling connected with the products, Chandler and Schwarz 2010). However, we acknowledge that anthropomorphizing makes material purchases appear to be relatively less material, and thus more experiential than regular material purchases. Future research should explore the possibility that anthropomorphizing might be another way to make material goods appear to be relatively more experiential. In addition, some of our results showed relatively low statistical significance—a p-value of approximately 0.05—which calls for future research to improve the robustness of the findings. Also, a potential limitation of study 2 is that we did not use a prototypical experiential purchase. We used the same product across all conditions to prevent potential confounding effects associated with different products. Future research needs to examine more prototypical experiential purchases to provide the robustness of our findings on anthropomorphizing experiential purchases.

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Declarations

Conflict of interest The authors declare no competing interests.

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