

Reversing the Placebo: Performance-Branded Experiences Can Undermine Consumer Performance

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Products bearing premium brand labels are known to increase perceptions of efficacy and improve objective consumer performance relative to lesser-branded equivalents, in what is traditionally described as a marketing placebo effect. In this paper, we suggest that experiences bearing these highly regarded brand labels can lead to a reverse effect, such that consumer performance actually declines with their use. Our findings demonstrate across domains of improving mental acuity, learning a new language, and developing financial analysis skills that completing performance-branded training experiences impairs objective performance in related tasks, relative to lower-performance-branded or unbranded counterparts. We posit that branded training experiences can evoke a brand-as-master relationship in which consumers take on a subservient role relative to the brand. As a consequence, higher-performance brands may impose greater demands upon consumers, increasing performance-anxiety and interfering with an individual's ability to perform effectively. These results document an important ramification of applying branding to learning experiences and identify contexts in which traditionally positive marketing actions can backfire for consumers.

Keywords Marketing placebo; Branding; Experiential products; Cocreation; Brand relationships

Consumers frequently purchase items to enhance their abilities, buying, for instance, top-of-the-line golf lessons or state-of-the-art golf clubs to improve their score and increase their enjoyment. Marketing-related placebo effects suggest that when such items are associated with higher perceived efficacy (e.g., when using a Nike-branded putter), they generate positive expectancies which spillover into actual product efficacy benefits for the consumer (e.g., better putting performance; Garvey, Germann, & Bolton, 2016; Park & John, 2014; Shiv, Carmon, & Ariely, 2005). Yet consumers interact with performance-enhancing products (golf clubs) and

performance-enhancing experiences (golf lessons) differently, such that strong performance branding on these items may have asymmetric effects on consumer performance.

Building on consumer-brand relationship research in which benefits are coproduced (e.g., Fournier, 1998; Kim & Kramer, 2015; Vargo & Lusch, 2004), we suggest that branded experiences (e.g., completing a Nike-branded putting lesson) evoke unique relationship orientations between consumers and brands to produce an outcome (e.g., better golf scores). That is, unlike performance-enhancing products which act as teammates serving and assisting consumers in achieving performance goals, performance-enhancing experiences act as coaches demanding outcomes from consumers, who take on a more subservient apprentice role. We suggest that asymmetric consumer-brand relationships (e.g., brand-as-master vs. brand-as-servant) can yield divergent effects of performance-branding on objective performance, and examine

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this possibility in the context of three different domains where consumers commonly seek to improve their abilities: boosting mental acuity, learning a new language, and developing financial investment competence.

Conceptual Background

Premium brands often command high-quality perceptions (Fuchs, Prandelli, Schreier, & Dahl, 2013; Heath, DelVecchio, & McCarthy, 2011), which can persist even when offerings are otherwise functionally identical (Garvey et al., 2016; Wansink, Payne, & North, 2007). In some cases, these brand-quality associations not only improve subjective evaluations but also objective consumer performance in related domains. For instance, exposure to Apple logos increases consumer creativity (Fitzsimons, Chartrand, & Fitzsimons, 2008), writing with an MIT-branded pen leads people to see themselves as more intelligent and perform better on math tests (Park & John, 2010, 2014), and using a Nike-branded putter can improve a user's golf score (Garvey et al., 2016). Akin to a medical placebo, marketing actions that make superficial changes to the branding, the pricing (Shiv et al., 2005; Waber, Shiv, Carmon, & Ariely, 2008), or even the packaging of a product (Wright, da Costa Hernandez, Sundar, Dinsmore, & Kardes, 2013) without making any functional modifications have been shown to improve consumer performance in what has been described as the marketing placebo effect.

While a variety of consumer-brand relationships have long been acknowledged in marketing (Aggarwal, 2004; Fournier, 1998; Kim & Kramer, 2015), existing brand-related placebo effects have centered upon only one relationship configuration, in which consumers are served by a branded product during performance (i.e., where the brand is an outsourced provider of benefits). However, consumers can seek to improve their abilities through experiences as well, purchasing apps to learn a new language, lessons to learn how to ski, and courses to master a new cooking technique or software program, for instance. Such performance-enhancing experiences may involve a different consumer-brand relationship as consumers and brands coproduce outcomes together (Vargo & Lusch, 2004, 2016).

Because consumers apply norms of interpersonal relationships to guide their interactions with brands (Aggarwal, 2004), each partner in the relationship can take on a specific hierarchical role relative to the other (e.g., such as brand-as-servant and brand-

as-partner from prior research; Aggarwal & McGill, 2011; Kim & Kramer, 2015). Given evidence that brands can adopt positions that are superior to those of their consumers (Dion & Borraz, 2017), we suggest that in performance-enhancing experiences, consumers may often take on a more subservient role when interacting with a branded provider, mimicking a "brand-as-master" relationship. That is, whereas brands primarily serve or assist consumers by supporting and advancing the user's needs via performance-enhancing products (e.g., golf clubs), brands coach or train consumers by instilling knowledge and abilities during performance-enhancing experiences (e.g., golf lessons). We in fact verified this idea with a study ($n = 140$ students). Participants evaluated the Nike brand as fitting more a brand-as-servant role when considering a Nike-branded putter (matched pairs $t(139) = 4.47, p < .001$), but fitting a brand-as-master role when instead considering a Nike-branded putting lesson (matched pairs $t(139) = 13.1, p < .001$).

We suggest that these consumer-brand relationship asymmetries can yield divergent effects of branding on performance. Past work on placebo-like branding effects centered upon performance-enhancing products, where positive brand-efficacy beliefs were shown to improve objective performance by boosting consumer self-efficacy and reducing performance-anxiety (Garvey et al., 2016; Park & John, 2014). Because performance-enhancing products provide assistance with performance, more efficacious products would correspondingly convey stronger support, thus improving consumer response expectancies regarding the task (relative to lesser-branded counterparts).

When strong performance brands are applied to products, they act as a more capable teammate assisting consumers during performance. However, when strong performance brands are applied to experiences, they may instead act as a more demanding coach asking more from consumers individually. Because the consumer-brand relationship configuration is inverted in performance-enhancing experiences, a high-performance-branded training experience may impose higher standards, leading consumers to believe they should (on their own) be able to reach a higher-performance level after training, in other words raising expectations of performance. When people are faced with higher-performance demands, this can elicit greater performance-anxiety and result in choking under pressure (Ariely, Gneezy, Loewenstein, & Mazar, 2009; Baumeister, 1984). In such situations, negative response expectancies associated with performance-

anxiety can manifest via working memory and attentional control interference (Baumeister & Showers, 1986; Beilock, Kulp, Holt, & Carr, 2004; DeCaro, Thomas, Albert, & Beilock, 2011; Gimmig, Huguet, Caverni, & Cury, 2006). Consequently, high-performance-branded training experiences may lead consumers to feel they should, on their own, be performing at a higher level (i.e., raising performance-expectations), increasing performance-anxiety and thus reducing objective performance relative to lower-performance-branded (or unbranded) counterparts.

This conceptualization implies the possibility of a “reverse” placebo effect in branding contexts. Conventionally, “forward” placebo effects arise when positive beliefs about products yield positive outcomes, though some prior work in medicine documents examples of reverse placebo effects, where positive product beliefs are negatively correlated with consumer outcomes. In a classic study, Storms and Nisbett (1970) found that insomniacs paradoxically slept faster after taking arousal pills, a finding has been explained by misattribution (where participants attribute arousal to the pill rather than themselves; Ross & Olson, 1981). Our results do not clearly support a misattribution mechanism in which positive brand-related beliefs are linked to positive response expectancies. Instead, our findings suggest that when the consumer–brand relationship is inverted, positive brand-related beliefs can actually yield negative response expectancies (i.e., performance-anxiety) that serve to impair objective behavioral outcomes. See Figure 1.

Study 1

We first assess the effect of performance-branding on the efficacy of performance-enhancing experiences. Similar to energy drinks studied within classic marketing placebo paradigms (e.g., Shiv et al., 2005), we chose to study the effects of high-

performance branding on popular brain-training games that also aim to improve mental acuity.

Method

Participants ($n = 134$, $M_{\text{age}} = 23$, 45 women) at a U.S. university completed the laboratory study for partial course credit. To conduct the study, we built a new, interactive computer game experience using JavaScript that allowed us to assess the impact of performance-branding on objective outcomes. The computer game involved a brain-training exercise mimicking popular programs (e.g., Lumosity). Participants were shown a continuously moving sequence of shapes where the goal was to determine whether or not the current shape was the same as the shape shown “two trials back,” known as the 2-back task (Jaeggi, Buschkuhl, Jonides, & Perrig, 2008). Each shape was shown for 1,500 ms with a 2,000-ms inter-trial interval. All participants read verbal instructions and completed example trials before the training experience.

Participants were randomly assigned to complete either a performance-branded or unbranded version of the brain-training game. In the performance-branded condition, participants were informed that the brain-training game was developed by NASA; NASA logos were displayed above and below the training task. An independent sample ($n = 46$ students) confirmed that the NASA brand indeed yielded high efficacy perceptions ($p < .001$). Respondents ($n = 48$ Amazon Mechanical Turkers, AMTs) also indicated that NASA took on a brand-as-master role when applied to a brain-training experience ($p = .006$) whereas it took on a brand-as-servant role when applied to a product, using energy drinks for comparison ($p = .009$). In the unbranded control condition, participants were simply informed that they would complete a brain-training game and no logos were displayed during the training experience. The content of the training experience was identical across conditions.

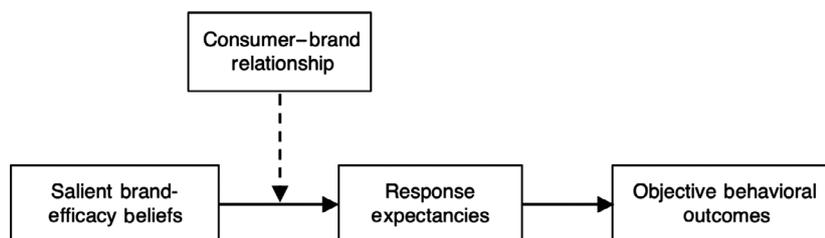


Figure 1. Extension to the marketing placebo framework, in a branding context.

In a separate test, we subsequently assessed the efficacy of the brain-training experience in improving mental acuity. To this end, participants were asked to solve twenty-four different Raven's Progressive Matrices (Raven, 2000), a common nonverbal component used in IQ tests that involve selecting a missing shape from a pattern. No brand information was displayed during the assessment. The Methodological Details Appendix presents supplementary information, analyses, and stimuli from all studies.

Results

Our findings revealed that participants who completed the high-performance-branded NASA training experience answered significantly fewer Raven's Matrices questions correctly ($M = 16.70$, $SD = 6.78$) compared to those who completed an identical unbranded training experience ($M = 19.39$, $SD = 4.50$), as indicated by a one-way ANOVA ($F(1, 132) = 7.31$, $p = .008$, $d = .48$). Controlling for age and education did not diminish the significance of this result; mood and effort also did not account for the effect (see A1.4 in Appendix S1).

Study 2

Study 1 demonstrated that counter to traditional marketing placebo findings, applying performance-branding to training experiences lowered efficacy relative to unbranded counterparts. In Study 2, we sought to gain a better understanding of this effect by identifying intervening processes through which high-performance brand cues may impair objective outcomes. Because performance-branded training experiences may impose greater demands upon consumers, users may feel greater performance-anxiety which can subsequently result in negative performance outcomes; we evaluated this account. Study 2 also included several design elements to address alternative explanations. We selected a domain in which participants would have no prior familiarity: learning Na'vi, the 1,500-word fictional language developed for the movie *Avatar*. We also ensured that the effects were not due to exposure to branding in itself by examining a comparison between a high-performance-branded enhancement experience to a lower-performance-branded counterpart.

Method

Respondents ($n = 128$, $M_{\text{age}} = 35$, 73 women) residing in the United States completed the study via

AMT. We designed the study to provide consumers with a language-learning experience mimicking popular language-learning software programs (e.g., Rosetta Stone) and varied the brand associated with the provider. We randomized whether participants completed a high-performance MIT-branded language tutorial, or a lower-performance University of Phoenix-branded language tutorial. We selected the brand based on prior marketing placebo-related research examining MIT-branded pens (Park & John, 2010, 2014). A separate sample ($n = 31$ AMTs) confirmed that the MIT brand carried significantly higher perceptions of efficacy relative to the Phoenix brand ($p < .001$). In an additional test, individuals ($n = 56$ AMTs) also indicated that both MIT/Phoenix took on a brand-as-master role when applied to a language training experience ($ps < .001$), whereas the brands took on a brand-as-servant role when applied to a product, using pens for comparison ($ps < .004$). Building on Shiv et al. (2005), we also manipulated the price of the language tutorial; because we found no differences between full and discounted versions (see A2.5 in Appendix S1), we report collapsed results below.

The language-learning experience involved video-based tutorials on the Na'vi language as well as text-based vocabulary lessons, introducing basic words and grammatical structures through repetition of Na'vi sentences and corresponding English translations. Brand logos were featured prominently in their respective tutorials (e.g., at the beginning of the video, at the corner of the vocabulary lesson), but the content of the language-learning experience remained identical across conditions.

After participants completed the tutorial, we measured language performance. To evaluate the efficacy of the language-learning experience, participants completed a Na'vi-to-English translation test. The test involved 17 multiple choice questions in which participants selected the correct English translation for various Na'vi words and sentences. No brand information was displayed during this assessment.

Afterward, to examine the processes through which brand influenced the efficacy of the performance-enhancement experience, we measured participants' performance-expectations ("The standards for this task were high") and performance-anxiety ("I was intimidated by the task," 1 = strongly disagree, 7 = strongly agree).

Results

Again, a one-way ANOVA revealed a significant main effect of brand on performance ($F(1,$

126) = 7.13, $p = .009$). Despite the fact that participants felt better-prepared after completing a high-performance MIT-branded training experience (see A2.4 in Appendix S1), their performance declined ($M = 10.42$, $SD = 4.12$), compared to a lower-performance University of Phoenix-branded training experience ($M = 12.25$, $SD = 3.61$, $d = .47$).

We assessed whether performance-expectations and performance-anxiety mediated the relationship between brand and performance by using PROCESS model 6 (Hayes, 2013), conducting a three-path mediation analysis from training experience brand to performance-expectations, performance-anxiety, and finally objective performance. A bootstrap confidence interval for the indirect effect of brand on performance via performance-expectations and performance-anxiety confirmed this mediation path ($b = -.094$, $SE = .062$, 95% CI $[-0.2447, -0.0081]$). These findings support the proposed account through which high-performance-branded enhancement experiences can reduce efficacy: by raising demands on consumers in a way that interferes with effective performance. We did not observe evidence of alternative indirect paths (via performance-expectations only and performance-anxiety only) or support for a model where performance-anxiety preceded performance-expectations (see A2.7 in Appendix S1).

Study 3

The previous studies established that high-performance-branded enhancement experiences can be less efficacious relative to their lower-performance and unbranded counterparts, by raising performance-expectations and increasing performance-anxiety. Study 3 aimed to reconcile these findings with prior work in the marketing placebo literature by comparing the effects of applying performance-branding to products versus experiences. While all participants completed the same tasks and used the same tools, we varied whether the consumer-brand relationship was established through interactions in the performance-enhancing *experience* (where brands took on a brand-as-master role), or through the performance-enhancing *product* (where brands took on a brand-as-servant role), yielding opposite consumer-brand relationship configurations.

Method

Respondents ($n = 282$, $M_{\text{age}} = 35$, 151 women) residing in the United States and Canada completed

the study via AMT. This study centered on understanding how branded products and experiences may assist or impair consumers in developing financial investment competence.

Building on the growing trend of consumers using online videos and coursework to develop new skills, we provided participants with a video-based financial training experience by adapting materials from a YouTube course on financial analysis. All participants watched videos explaining financial concepts such as compound interest, present value and rate of return. We varied both the branding (high-performance or unbranded) and the locus of the consumer-brand interaction (branded-experience or branded-product), applying three focal conditions only: (a) performance-branded training experience, (b) performance-branded product, and (c) a control in which both experience and product were unbranded. We did not have strong theoretical predictions regarding the combination of both completing a performance-branded experience while also using a performance-branded product during tasks. Having opposing effects on performance, we anticipated a null effect; thus, we did not include a condition in which both product and experience were performance-branded. In the branded-experience condition, Goldman Sachs (GS) logos were presented throughout the information pages and on the videos. The content remained identical across all conditions.

Following this financial training experience, we assessed consumer performance by asking participants to demonstrate their financial knowledge through completing a twelve-question financial analysis assessment. Participants were informed that they would be completing questions from a practice CFA test. During the assessment, participants were asked to use a financial analysis calculator to assist them in providing solutions. In order to manipulate the branding of this product, we built a new, web-based financial calculator using JavaScript and hosted it on an independent website. In this way, similar to prior marketing placebo research, we could manipulate the brand of the product used during performance. In the branded-product condition, GS logos were displayed prominently on the calculator. No brand information was displayed on the assessment itself, in all conditions.

Thus, our manipulation varied the orientation through which consumers interacted with the performance brand. When embedded within the financial calculator, the GS brand provided support and

assistance during performance; however, when embedded within the financial training experience, the GS brand instead bestowed and conveyed skills to the consumer (i.e., adopting a brand-as-master rather than a brand-as-servant relationship). A separate test ($n = 51$ students) indicated that the GS brand indeed yielded high efficacy perceptions ($p < .001$). A pretest ($n = 119$ AMTs) in which participants interacted with both the training experience and the calculator also confirmed that participants viewed GS as taking on a brand-as-servant role after using the GS-branded financial calculator ($p < .001$), but instead taking on a brand-as-master role after completing the GS-branded financial training experience ($p = .006$).

Afterward, to evaluate the proposed mechanism, we measured performance-expectations and performance-anxiety. We also measured self-efficacy and misattribution-related items to evaluate additional processes that may be at play (for details, see A3.3 in Appendix S1).

Results

A one-way ANOVA revealed a significant effect of the condition on performance ($F(2, 279) = 10.82$, $p < .001$). In line with the previous studies, when the performance brand was applied to the training experience, participants solved significantly fewer financial analysis questions correctly ($M = 2.11$, $SD = 1.93$) relative to the unbranded control ($M = 2.88$, $SD = 2.25$, $t(279) = 2.41$, $p = .017$, $d = .31$). However, in line with prior marketing brand-placebo findings, when the performance brand was instead applied to a product providing assistance during the test, participants solved significantly more financial questions correctly ($M = 3.60$, $SD = 2.39$) relative to the unbranded control ($t(279) = 2.21$, $p = .027$, $d = .28$). Indeed, we observed that participants who completed a performance-branded enhancement experience solved fewer questions correctly relative to those who instead used a performance-branded enhancement product during the test ($t(279) = 4.65$, $p < .001$, $d = .52$). See Figure 2.

Mediation analysis. We posited that high-performance-branded enhancement experiences can impair objective outcomes by raising performance-expectations and performance-anxiety. To evaluate this account, we applied serial mediation using PROCESS model 6 (Hayes, 2013), focusing on performance-branded training and control conditions. A bootstrap confidence interval for the indirect effect of the GS-branded training experience on

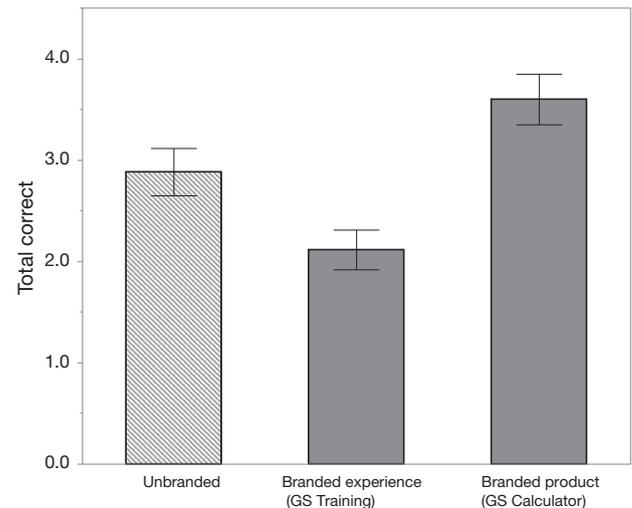


Figure 2. Study 3 varied whether the performance brand (Goldman Sachs) was applied to the performance-enhancing product (financial calculator) or the performance-enhancing experience (financial training). Objective performance, measured by the total number of financial questions solved correctly, is displayed on the vertical axis; standard errors shown.

performance via performance-expectations and performance-anxiety confirmed this mediation path ($b = -.0504$, $SE = .0281$, 95% CI $[-0.1126, -0.0048]$). Evidence also supported an indirect path via performance-expectations only; however, we did not find support for a model where performance-anxiety preceded performance-expectations (see A3.11 in Appendix S1).

Additional mechanisms. An expectancy-attribution account suggests that people could misattribute their financial ability to the high-performance brand rather than to themselves. This lowered responsibility for outcomes would lead people to exert less effort on the tasks and would be more pronounced among individuals with high incoming financial ability (Ross & Olson, 1981). Reverse performance effects were indeed strongest among individuals who had high incoming financial analysis ability. However, counter to this account, they did not take any less personal responsibility for their performance, nor did they exhibit lower effort on tasks. Thus, we did not find that people “outsourced” personal responsibility and effort to the brand, as they did to the pill in the classic Storms and Nisbett (1970) setting. For details, see A3.7 in Appendix S1.

Additionally, a negative self-attribution mechanism suggests that consumers who undergo a performance-branded training experience may evaluate their own abilities to be inferior, lowering self-efficacy, and interfering with effective performance. Although responses were directionally consistent,

self-efficacy did not significantly mediate the reverse effect on performance. Furthermore, including self-efficacy as a covariate in the mediation model described above did not diminish the significance of the proposed indirect path (see A3.8 in Appendix S1), suggesting that, to the extent that negative self-evaluations contributed to the reverse effects, they largely operated independently. Moreover, contrary to a self-efficacy account, an additional study also revealed that completing the GS-branded training significantly raised self-efficacy and self-esteem immediately after the training experience (see A3.9 in Appendix S1). We present deeper discussion and analyses within the Methodological Details Appendix.

General Discussion

Performance brands are traditionally thought to *improve* objective outcomes when applied to performance-enhancing products; the current findings demonstrate that performance brands can instead *impair* objective outcomes when applied to performance-enhancing experiences. We suggest that this divergence can be explained by the distinct consumer-brand relationship configurations that arise when being supported by a performance-enhancement product, versus when being trained through a performance-enhancement experience. Our work extends current understanding of marketing placebos, examines a “brand-as-master” relationship that has not received attention in prior research, and identifies divergent consequences of applying marketing actions to products versus experiences.

Our findings suggest that positive marketing actions (e.g., performance-branding) can generate negative outcomes (e.g., performance-anxiety, lowered performance) for consumers who seek to improve their abilities. Future research may further examine whether similar marketing actions also negatively influence other important learning-related outcomes such as feelings of mastery (Yang, Carmon, Ariely, & Norton, 2019) or interest in continued learning. Additionally, while certain types of consumers may benefit from performance-anxiety (e.g., those with a “stress mindset”; Crum, Salovey, & Achor, 2013), others may be especially vulnerable to performance impairment (e.g., prevention-oriented consumers; Klenk, Strauman, & Higgins, 2011).

Research could also explore when performance-branded experiences may generate more positive outcomes. Our studies focused specifically on

training experiences where consumers learned from a branded provider, but nontraining-related experiences (e.g., savoring a gourmet dinner) may evoke a different consumer-brand relationship where strong brands improve consumer evaluations (e.g., perceived quality, satisfaction). In training contexts, performance brands could potentially thrive when offering lessons through a helpful, encouraging assistant (such as a smart robot or digital avatar) seen in a brand-as-servant role, rather than through traditional apps or online courses. Additionally, when training experiences are completed far in the past, anxiety-inducing performance-expectations may no longer be salient; consequently, consumers may simply see themselves as being “Goldman Sachs-trained,” for example, providing a boost to self-efficacy and improving performance outcomes. Finally, because arousal impacts performance through a Yerkes and Dodson (1908) relationship, slightly strong (as opposed to moderately and very strong) performance brands could be more beneficial to consumers when applied to performance-enhancing training experiences (e.g., Kaplan rather than MIT; Garvey et al., 2016). The integration and extension of current findings on branded training experiences would be a fruitful path for future work.

Our research in addition offers new insight into a brand-as-master relationship orientation that is of growing importance. Consumers increasingly play the role of devotees through social media interactions, and recent findings suggest that brands may even be occupying the authoritative role historically held by religion (Shachar, Erdem, Cutright, & Fitzsimons, 2010). Further research could identify the contexts in which brands are perceived in the brand-as-master role, such as when there are large consumer-brand informational asymmetries (e.g., perhaps including when consumers abdicate control of their data to a company). Future work could also explore how consumers respond to brand missteps or misconduct (e.g., unfair prices and practices) when implemented by brands seen in a master role, compared to a partner or servant role.

More broadly, our work suggests that marketing actions may have diverging effects when applied to products rather than experiences, an issue that has not been explored in prior literature. Examining how other marketing actions interact with material-experiential differences may offer many insightful directions for future research. For example, while branding has since ancient times been used as a mark of consistency and quality when applied to products, branding certain experiences could undermine their uniqueness and erode the conversational

value consumers are able to derive (Bastos & Brucks, 2017). Similarly, while brands may cue positive quality associations when applied to products (e.g., DeWalt power tools), branding social media experiences (e.g., DeWalt YouTube tutorials) could backfire by reducing the perceived authenticity of the content.

Consumers go out of their way to acquire premium branded items, so much so that they are even willing to pay hefty financial premiums for them when facing severe fiscal constraints (Charles, Hurst, & Roussanov, 2009). They often seek out these brands, not only expecting higher efficacy, but also as a compensatory action to feel better about themselves (Atalay & Meloy, 2011; Rucker & Galinsky, 2008). Our work suggests that consumers may not always get what they pay for (Shiv et al., 2005). Instead, the performance-branded experiences that consumers perceive to be of higher quality may in fact counterproductively impair performance. The increasing consumer reliance upon experiential purchases to enhance their abilities, coupled with the growing number of firms who provide them, underscores the need to understand how marketing actions in the experiential domain impact consumer outcomes.

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Supporting Information

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Appendix S1. Methodological Details.