

Unexpected-Framing Effect: Impact of Framing a Product Benefit as Unexpected on Product Desire

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Product tests are a common feature before any product launch. During product tests, marketers might discover that the product can deliver additional unintended benefits to the users. Should marketers communicate such unexpectedly found benefits to their potential customers as an unexpectedly discovered benefit or as an intended benefit? Across six experiments, including a field experiment, the current research shows that framing a product benefit as unexpected increases desire for the product, when consumers have a heightened motivation to seek rewards. However, framing an undesirable product feature (e.g., a side effect) as unexpected can negatively impact product desirability for consumers, who have a heightened motivation to avoid losses. Finally, highlighting another managerially important boundary condition, our findings show that the unexpected-framing effect is attenuated when the benefit framed as unexpected is incongruent with the product category. Theoretical and managerial implications of unexpected framing are discussed.

Keywords: unexpected, product benefits, reward motivation

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As part of the product testing process, StriVectin, a popular brand of stretch mark-reducing cream, handed out samples of its then-new cream product to some consumers. Participating consumers who tested these samples, labeled topical cream, discovered that the stretch-mark-reducing cream, when applied on the face, unexpectedly reduced wrinkles ([Business Wire 2006](#)). Similarly, consumers who sampled an anti-aging beauty supplement from Murad, a popular beauty brand, unexpectedly discovered that the supplement reduced arthritis pain ([Jones 2016](#)). During the process of product testing, companies commonly learn from their participating consumers that a product can deliver additional, originally unintended benefits. Despite the common occurrence of such incidents, it is not clear how brands should communicate these unexpectedly discovered benefits to their potential consumers. Should they frame such a benefit as unexpectedly discovered in their marketing communication or not? The current research examines which of the two approaches would be

more effective in increasing consumers' preference for the product.

Intuitively speaking, when prospective consumers believe that a product benefit was unexpectedly discovered and therefore was not intentionally designed, they should expect the product to be less effective in delivering that benefit, as opposed to when they think the benefit was intentionally designed. Research on intentionality, which suggests an important link between intentions of the source and perceived effort, supports this intuition. This research shows that knowledge of a source's intention can inform observers about the degree of the source's motivation (Ach 1935; Atkinson 1964; Greenberg and Frisch 1972; Heider 1960; Lewin 1951). When the observer believes the source intended to achieve an outcome, they are likely to infer that the source invested higher effort, compared with when the same outcome was unintentionally achieved (Ajzen 1996). Indeed, consumers have been found to reward high-effort companies; when consumers perceive that the firm exerted high (vs. low) effort in creating a product, they evaluate the product more favorably (Morales 2005). In the current context, these findings suggest that when a benefit is communicated as intentionally designed, consumers should perceive greater effort investment from the firm, which should positively impact their preference for the product, compared with when the same benefit is framed as unexpected and, therefore, perceived as unintentionally designed.

An alternative possibility is that framing a benefit as unexpected will increase consumer preference for the product, compared with when the same benefit is not framed as unexpected. Why might this be the case? We argue that it is likely that an unexpected-benefit framing serves as a cue leading prospective consumers to anticipate other unexpected benefits from the target product, thus enhancing their anticipated utility and therefore their desire for the product. This is consistent with research on neurobiology of rewards, which suggests that unexpectedness of a reward modulates activity in the dopaminergic reward pathway, which has been implicated in reward anticipation and seeking behaviors (Spanagel and Weiss 1999). Specifically, research in this domain has demonstrated that dopaminergic neurons respond with greater vigor when organisms in a heightened reward-seeking state (e.g., when they are thirsty) are exposed to an unexpected reward (pleasant taste of juice), compared with an expected reward (Glimcher 2011). Simply stated, these findings in the neurobiology of rewards would suggest that experiencing an unexpected reward leads organisms that are in a heightened reward-seeking state to anticipate other potential rewards.

It should be noted that while past research on unexpected rewards has focused on the actual experience of unexpected rewards, the current research focuses on *merely perceiving a reward (product benefit) as unexpected* versus not, in the absence of any actual experience of the product.

However, to the extent that merely reading about others receiving an unexpected benefit could operate as a cue leading to anticipation for other benefits, prior research on unexpected rewards would suggest that framing a benefit as unexpected should enhance the desire for the target product.

Given that research supports the efficacy of both an expected as well as an unexpected framing, this research seeks to examine which approach is likely to work best in positively influencing consumer preference, and provides preliminary evidence to suggest what could be the underlying mechanism. To this end, we report six experiments, including a field experiment. In exploring whether framing a benefit as unexpected versus not framing it as unexpected affects consumer preference, our research makes important contributions. Marketers are routinely faced with designing marketing communication to influence the preference for their product among potential consumers who lack actual experience of the product. The current research delineates when framing a product benefit as unexpected versus not framing it as unexpected, a task that can be managed by marketers during the process of marketing communication, can enhance potential consumers' desire for the target product. In doing so, our findings also contribute to research on product framing.

CONCEPTUAL FRAMEWORK

In this section, we draw upon different streams of research to explore how unexpected framing could impact consumer preferences.

Intentionality and Product Preferences

Research on intentionality suggests that the intention of an agent can serve as a fundamental cue, which allows an observer to form inferences about the agent's motivation and the effort put in by the agent. Thus, when an observer believes that the agent did not intend to achieve an outcome—rather, the outcome was unexpectedly achieved—the observer is likely to give less praise or blame to the agent for his or her actions, compared with when the observer believes the agent intended to cause the outcome (Krebs 1982). For example, damage caused unintentionally is underestimated and, therefore, a person who unintentionally causes damage is likely to receive less blame for their actions than a person who intentionally caused the same amount of damage (Ames and Fiske 2015).

In the context of positive outcomes, research shows that an agent is less likely to get credit for his or her actions leading to positive outcomes, if the actions are perceived to be unintentional and, thus, the outcome is believed to be unexpectedly achieved. To illustrate, Guglielmo and Malle (2010) have shown that if an observer believes a company launched a program that unexpectedly helped the

environment, the company is likely to get less praise compared with when the observer believes the company intended to help the environment.

In a similar vein, recipients of help perceive donors as more motivated to help when they believe that the donors helped intentionally compared with when they believe that the donors' actions unintentionally helped them (Gouldner 1960). For example, if a person's actions were intended to help raise money for a cause, as opposed to if the person's actions unexpectedly helped to raise the same amount of money, the person is perceived to be more altruistic. This research further suggests that people appreciate intentional help more and, therefore, intentional help is more likely to be reciprocated compared with unintentional help (Greenberg and Frisch 1972).

Attributions of intentionality impact people's inference about not only the motivation of the agent, but also the ability of the agent. Specifically, if people believe that an agent's actions unexpectedly led to an outcome, they would infer that the agent possesses less skill and exerted less effort to achieve the outcome than if they believe that the outcome was intended by the agent (Caruso, Waytz, and Epley 2010; Malle and Knobe 1997). For example, people believe that a streak of consistent but random events will continue to emerge (e.g., an agent is likely to get a hot hand) if they attribute intentionality to the streak's agent. Similarly, they believe that a streak of random events will reverse if they do not attribute intentionality to the streak's agent (Caruso et al. 2010).

In sum, research on intentionality suggests that attributions of intentionality could lead an observer to believe that the agent had greater motivation, exerted enhanced effort to achieve the outcome, and possesses the ability to control the outcome. Attribution of intentionality, therefore, leads an observer to allocate more credit to the agent. In the current context, research on intentionality would suggest that when consumers believe a product benefit was intentionally designed, as opposed to unexpectedly discovered, they should believe that the company has a higher ability to design the product benefit and exerted more effort to develop it (Malle and Knobe 1997). Thus, the company should receive more praise when consumers believe that a product benefit was intentionally designed, compared with when the same benefit was unexpectedly discovered and therefore wasn't intended by the company. Stated differently, this stream of research would suggest that framing a benefit as unexpected should negatively impact consumers' evaluation of the product, compared with when the same benefit is perceived as intentionally designed and thus is expected from the product.

Unexpectedness and Reward Seeking

While research on intentionality suggests that unexpected framing could hurt consumer preferences, other research suggests that unexpected framing could positively

impact consumer preferences. Research on consumer recommendation systems suggests that when the system recommends an unexpected item, as opposed to an accurate but expected item, it leads consumers to explore the product category in search of other interesting products (Wu et al. 2016). To illustrate, Wu et al. (2016) showed that when a recommendation system suggested an unexpected title in the horror movie category, consumers were motivated to further explore the horror category in the anticipation of finding other unexpected titles.

This finding raises an interesting possibility. An unexpected reward, by definition, leads to violation of expectancy. It is possible that when people experience an unexpected reward, which leads to an expectancy violation in the positive direction, it could lead them to anticipate other potential rewards from the source that delivered the unexpected reward. However, when consumers experience an expected reward, the outcome is as expected and, therefore, there is no reason for consumers to anticipate other potential rewards from the source.

In the current context of unexpected product benefits, the aforementioned discussion would suggest that framing a benefit as unexpected could act as a cue leading prospective consumers to anticipate other potential benefits from the product. Thus, an unexpected-benefit framing could enhance the anticipated utility for the product, thereby increasing prospective consumers' desire to experience the product.

This proposition is consistent with research on reward motivation, which indicates that experiencing an unexpected reward, compared with an expected reward, leads to enhanced dopaminergic activity in the reward pathway of the brain, which is strongly implicated in reward anticipation and seeking behaviors (McClure, Berns, and Montague 2003; Spanagel and Weiss 1999; Volkow, Wang, and Baler 2011). For example, Roesch, Calu, and Schoenbaum (2007) show that dopaminergic neurons responded with greater vigor when food-deprived rats received small quantities of sucrose unexpectedly, compared with when they received the same reward expectedly (Glimcher 2011). There is some research conducted with humans that has led to similar findings. For example, McClure et al. (2003) found that thirsty participants showed greater dopaminergic activity when they received squirts of juice at unexpected times, compared with when they received similar quantities of juice at expected times. Findings from the reward motivation literature are thus consistent with the idea that experiencing an unexpected reward can lead to anticipation for other potential rewards.

Unexpected Framing and Reward Sensitivity

It should be noted that research documenting an increase in dopaminergic activity in response to an unexpected reward indicates that experiencing unexpected rewards leads

to these effects when organisms have a heightened sensitivity to rewards (such as when they were food deprived). That is, reward sensitivity is likely to moderate the downstream effects of experiencing unexpected rewards. To better understand why reward sensitivity should moderate the effect of unexpected rewards, imagine a consumer who unexpectedly comes across a sign for a newly opened restaurant. This consumer is more likely to have an enhanced positive utility for the restaurant when the consumer is hungry and therefore has a heightened reward-seeking state, compared with when the consumer is not hungry. In sum, past research on reward motivation would suggest that the unexpected-framing effect should be moderated by reward sensitivity, such that only when a consumer has a heightened motivation to seek rewards should unexpected-benefit framing positively impact anticipated utility for the product and therefore increase consumers' desire.

We should note that the current research departs from prior research examining unexpected rewards in two important ways. First, prior research on unexpected rewards has primarily focused on how individuals react to receipt of an unexpected versus an expected reward. In contrast, the current research focuses on exploring whether merely *perceiving a potential reward as unexpected* versus expected, in the absence of any actual experience of the reward, could impact the desire for the reward. Specifically, we are interested in examining if merely viewing a product description, which frames one of the benefits as unexpected versus not, could increase or decrease the prospective consumer's desire for the target product. Second, while much of prior research has focused on primary rewards such as unexpected food rewards, the current research focuses on unexpected product benefits. Given there is no empirical evidence demonstrating a link between *perceiving a product benefit as unexpected* and anticipated utility, it is not clear if the aforementioned findings would be applicable in the current context.

Overview of the Current Research

To summarize, while research on intentionality suggests that unexpected-benefit framing should negatively impact overall consumer preferences, research on reward motivation suggests that unexpected framing should positively impact the desire for the target product. Furthermore, there are no a priori reasons to favor one prediction over the other. Thus, a primary goal of the current research is to examine which of the two contradictory predictions would find empirical support in the context of product benefit framing. While in the current research, we do not directly examine the exact mechanism driving the proposed unexpected-framing effect, we examine various boundary conditions underlying the unexpected-framing effect. Drawing upon our findings, we end with a discussion on different possible and implausible causes.

Next, we present six experiments, including a field experiment conducted on WeChat, to examine whether the impact of framing a product benefit as unexpected would hurt product preferences, as suggested by research on intentionality, or help product preferences, as suggested by research on reward motivation. For parsimonious testing of the unexpected-framing effect, in studies 1 through 6, we compare a product described as being designed to deliver two key benefits, and delivers both, with a product described as being designed to deliver one of the two key benefits and unexpectedly delivers another one. Given the common occurrence of finding unexpected benefits in the beauty and health product categories, in the current research we have primarily focused on the health and beauty product categories.

Unless otherwise reported, no participants or conditions were dropped from the analyses in any experiment. We report all numbers with two significant digits after the decimal point. This research was approved by the relevant institutional review boards.

STUDY 1

A primary objective of this field study was to examine the two competing unexpected framing predictions, one arising from research on intentionality and the other arising from research on reward motivation. To achieve this objective, prospective customers on WeChat, a large multifunction mobile app in Asia ([The Economist 2016](#)) popularly used as a messenger and sales channel, were sent advertisements for a sunscreen spray. The advertisement communicated two benefits of the sunscreen spray, which was positioned as a sunscreen perfect to use on vacations. We manipulated the framing of the benefits, such that one of the two benefits was framed as unexpected or neither of the two benefits was framed as unexpected. If the prediction arising from research on intentionality is valid, then unexpected framing should be less effective in increasing consumer preference for the product. However, if the prediction arising from research on reward motivation is valid, then framing one of the product benefits as unexpected should positively impact consumer preference for the product, compared with when unexpected framing is not used.

Design and Procedure

This study was conducted on a mobile store on WeChat. On WeChat, a mobile store can contact potential customers through individual messaging when launching new products or promotions. Customers interested in purchasing the product can respond to sellers through text for more information as well as to purchase the product, and pay instantly using the mobile payment feature. This form of mobile shopping is common among young consumers in China, especially for consumer products such as beauty products.

The current field study was run with a medium-sized store that primarily sells beauty products, and has been in the mobile shopping business for two years.

The current study focuses on a sunscreen spray because this was the product that the retailer, who was willing to collaborate with us, was interested in urgently selling and had already planned a summer sale for. Prospective customers ($N=21,514$) on the retailer's mobile store were sent an advertisement for this sunscreen spray. This advertisement used a hedonic positioning for the sunscreen. Specifically, the advertisement included an image of a couple relaxing on a beach, along with the tagline "Now Sun Is Fun." The advertisement further communicated two benefits of the target sunscreen spray: 1) protects skin from wrinkle-causing UVA rays, and 2) makes skin look brighter and even-toned by color correcting complexion. (see appendix for details). The tagline and the benefits were presented in Mandarin, as the experiment was conducted in China with Chinese consumers.

To manipulate the benefit frame, we designed two different versions of the advertisements. In one version, the second benefit (makes skin look brighter) was framed as unexpected, while in the other version, neither of the two benefits was framed as unexpected. The ads were the same on all the other dimensions. Given customers are contacted using a mobile app, to ensure that prospective customers are not overloaded with information, sales representatives typically send the information using a series of texts. Following the same pattern, in the current study, prospective customers were sent the product information through a series of texts. They were first texted the summer promotional price (CNY 89) of the sunscreen. The retailer also offered free delivery and a chance to be entered into a lottery for CNY 5 to all the buyers.

After informing the customers of price and delivery, the main advertisement for the target product was texted to all the prospective customers. Once the complete print advertisements were sent to the prospective customers, sales representatives sent three more messages reiterating the main message documented in the complete print ad in the following order: 1) the advertisement slogan ("Now Sun Is Fun"), 2) first product benefit ("Protect skin from wrinkle-causing UVA rays"), and 3) second product benefit ("Makes skin look brighter"), which was either framed as unexpected or not framed as unexpected (see appendix for an illustration).

For each customer, the sales representative noted whether the prospective customer made a purchase. Product sales was the key dependent measure in the current study.

Results

A logistic regression (unexpected coded as 1; expected coded as 0) revealed a significant unexpected-framing effect (Wald $\chi^2 = 9.96$, $p = .002$, odds ratio = 1.22; Nagelkerke R-square = .0014); purchase rate for the

sunscreen spray was significantly higher when unexpected framing was used (5.69%), compared with when unexpected framing was not used (4.73%).

Discussion

Findings of the current study show that prospective customers who were exposed to an advertisement that framed one of the two benefits of the sunscreen spray as unexpected were more likely to purchase the sunscreen, compared with those who were exposed to the advertisement that did not use unexpected framing. It should be noted that in the current study, advertisements presented the sunscreen against the backdrop of a hedonic consumption context. We know from past research that consumers have a heightened sensitivity to reward cues when the consumption context is hedonic, compared with when the consumption context is utilitarian (Ramanathan and Menon 2006; also see Dhar and Wertenbroch 2000). The current findings thus indicate that unexpected framing positively impacts consumer preferences when reward sensitivity is heightened (i.e., when the consumption context is hedonic). These findings support predictions arising from prior research on reward motivation and are in contrast with prediction arising from research on intentionality, which would suggest that unexpected framing should be a less effective strategy for increasing consumer preferences, compared with expected framing. One limitation of study 1, however, is that given the constraints of the field study, we did not explore unexpected framing in a consumption context, which does not heighten reward sensitivity (i.e., when the consumption context is utilitarian). Thus, to fully explore the role of reward sensitivity in moderating the unexpected-framing effect, in the next study we examine the unexpected-framing effect in both hedonic and utilitarian consumption contexts.

STUDY 2

In study 2, we examine whether the positive effect of unexpected framing is attenuated when the consumption context is utilitarian. Additionally, in the current study, following past research (Horowitz and McConnell 2002; Litt, Khan and Shiv 2010), we measured desire for the target product using a more direct measure, willingness to pay (WTP). Finally, in this study, we also included non-desire-related product evaluation measures, such as perceived product effectiveness. Research on reward motivation suggests that increased anticipated utility of a reward should enhance only desire for the product; it should not impact non-desire-related evaluation of the target reward (Ochner et al. 2012; Stice et al. 2009). Therefore, we predicted that any positive effect of unexpected-benefit framing should be specific to the desire for the target

product, and not generalize to perceived effectiveness of the product.

Design and procedure

One hundred fifteen US-based participants, recruited from Amazon Mechanical Turk (MTurk), participated in the study. Prior to analyses, four participants who had taken the study multiple times were removed, leaving us with a total sample of 111 participants (60 females; mean age = 34.56 years; SD = 11.44).

The study followed a 2 (benefit frame: expected vs. unexpected) \times (consumption context: hedonic vs. utilitarian) between-subjects design. Participants were randomly assigned to the four conditions and all participants were asked to imagine that they were buying a sunscreen. Drawing upon past research (Kronrod and Danziger 2013; Wadhwa and Zhang 2015), we manipulated consumption context by asking participants to imagine that they were buying a sunscreen to use on either an upcoming family vacation (hedonic consumption context) or a business trip (utilitarian consumption context).

These two consumption contexts were selected based on a pretest, which asked 59 participants (32 females, mean age = 35 years; SD = 12.15) to evaluate the two consumption contexts sequentially, with the presentation order of the consumption contexts counterbalanced. Following past research (Khan and Dhar 2010), we first described utilitarian and hedonic consumption contexts, and then asked participants to evaluate each consumption context on how hedonic they perceived the consumption context to be (1 = Primarily utilitarian, 7 = Primarily hedonic). A paired sample *t*-test indicated that while buying a sunscreen for a family vacation was perceived as primarily hedonic ($M = 4.71$, $SD = 2.31$), buying a sunscreen for a business trip was perceived as primarily utilitarian ($M = 1.86$, $SD = 1.28$; $t(58) = 8.76$, $p < .001$). Further, one-sample *t*-tests indicate that buying a sunscreen for a vacation was significantly above the midpoint ($t(58) = 2.36$, $p = .021$), while buying it for a business trip was significantly below the midpoint ($t(58) = -12.82$, $p < .001$).

Subsequent to being asked to imagine buying a sunscreen for a family vacation or a business trip, all participants read a product description of a fictitious brand of sunscreen. As in the previous study, in the expected benefit-frame conditions, the sunscreen was described as one designed to protect skin from wrinkle-causing UVA rays and make it look brighter and even-toned by color-correcting the complexion. Further, the description indicated that consumers found the new sunscreen to be effective in both shielding against the wrinkle-causing UVA rays and making their skin look flawless and radiant, as was expected. In the unexpected benefit-frame conditions, the sunscreen was described as a sunscreen developed for protecting skin from wrinkle-causing UVA rays. The description indicated that consumers found the sunscreen to

be effective in shielding against the wrinkle-causing UVA rays and, unexpectedly, also found it to be effective in making their skin look flawless and radiant (see appendix for details).

Once participants had read the product description, they were asked to indicate the amount they were willing to pay for the sunscreen. Specifically, participants indicated their WTP using a slider scale ranging from \$0 to \$50 for a 1.4 ounce bottle of the advertised sunscreen. In the current study, participants also evaluated the perceived effectiveness of the sunscreen on two seven-point scale items: 1) how effective do you think the sunscreen would be in anti-aging? and 2) how effective do you think the sunscreen would be in improving skin tone? (1 = Very ineffective, 7 = Very effective; Cronbach's $\alpha = .70$). As alluded to earlier, we were not expecting any differences on the perceived effectiveness measure. At the end, participants answered a few demographic questions, including age and gender.

Results

Willingness to Pay. A two-way ANOVA revealed a nonsignificant main effect of benefit frame ($F(1, 107) = 1.21$, $p = .27$). Not germane to our hypothesis, we found a marginally significant main effect of the consumption context ($F(1, 107) = 3.53$, $p = .063$). Specifically, WTP for the product was marginally higher when the consumption context was hedonic ($M = 9.82$), compared with when the consumption context was utilitarian ($M = 8.01$). Importantly, as predicted, we observed a significant interaction between the consumption context and benefit frame ($F(1, 107) = 6.05$, $p = .015$; see figure 1) factors. As hypothesized, when the consumption context was hedonic, participants in the unexpected benefit-frame condition indicated a higher WTP ($M_{\text{unexpected}} = 11.54$, $SD_{\text{unexpected}} = 6.75$), compared with those in the expected benefit-frame condition ($M_{\text{expected}} = 8.11$, $SD_{\text{expected}} = 3.99$; $F(1, 107) = 6.40$, $p = .013$, $d = .62$). However, when the consumption context was utilitarian, there was no difference in WTP between the unexpected and expected benefit-frame ($M_{\text{expected}} = 8.67$, $SD_{\text{expected}} = 5.05$ vs. $M_{\text{unexpected}} = 7.36$, $SD_{\text{unexpected}} = 3.99$; $F < 1$, $p = .34$) conditions.

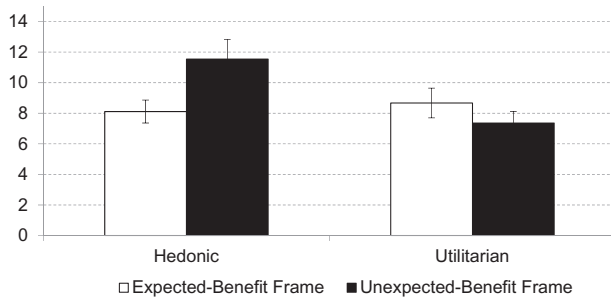
Perceived Effectiveness. As predicted, both the main effects of benefit frame ($F < 1$, $p = .804$) and consumption context ($F < 1$, $p = .980$), as well as the interaction between the two factors on perceived effectiveness, failed to reach significance ($F < 1$, $p = .765$). That is, participants perceived the product to be equally effective across conditions, thus indicating that unexpected-benefit framing impacted only the desire-related dimension (WTP) of the product.

Discussion

Consistent with findings from the field experiment, the current study shows that when the consumption context

FIGURE 1

IMPACT OF UNEXPECTED FRAMING ON WTP BY CONSUMPTION CONTEXT (STUDY 2)



was hedonic, framing one of the product benefits as unexpected enhanced desire for the product (as measured by the WTP), compared with when that benefit was not framed as unexpected. Findings of the current study further show that while framing a product benefit as unexpected versus expected enhanced consumer desire for the product when the consumption context was hedonic, it did not impact product desire when the consumption context was utilitarian. Moreover, in line with research on neurobiology of rewards, findings of the current study show that while unexpected-benefit framing enhanced desire for the product (as measured by WTP), it did not generalize to the non-desire-related measure of perceived effectiveness of the product.

One could argue that the unexpected-framing effect observed in studies 1 and 2 was driven by positive mood. Specifically, learning about a product delivering an unexpected benefit could positively impact participants' moods, which in turn could positively impact consumer preferences (Heilman, Nakamoto, and Rao 2002; Mellers, Schwarz, and Ritov 1999). However, if the positive mood account is valid, then knowledge of an unexpected benefit should have positively impacted both the perceived effectiveness of the sunscreen and WTP. In contrast, the unexpected framing was found to be specific to the WTP for the product. Importantly, a positive mood account would predict unexpected framing to enhance product desirability regardless of the consumption context, a prediction inconsistent with the findings of the current study.

STUDY 3

Study 2 elucidated the role of an important boundary condition—the nature of the consumption context—for the unexpected-framing effect to be demonstrated. While consumption context can influence how reward-sensitive consumers are, people can also greatly differ in their individual level of sensitivity to rewards. In this study,

therefore, using a neutral consumption context, we further explore the role of reward sensitivity in moderating the unexpected-framing effect by measuring individual differences related to reward sensitivity.

Research linking physiological systems to reward-seeking behaviors suggests that the appetitive system, known as the behavioral activation system, underlies people's sensitivity to impending reward cues. Individuals who are high on behavioral activation system (BAS) exhibit heightened sensitivity to rewards, while those low on BAS show minimal sensitivity to rewards (Carver and White 1994). Drawing upon this research, we argue that the unexpected-framing effect should be demonstrated among those high on BAS, but not for those low on BAS. Given that we did not use a hedonic consumption context in this study, we were not expecting a main effect of unexpected framing; rather, we expected only a significant interaction between BAS and unexpected framing.

Design and procedure

Two hundred eighty-two US-based participants, recruited from MTurk, participated in the study. After removing those who took the study multiple times, we were left with a sample of 258 participants (108 females, mean age = 32.62 years; SD = 10.40).

The study followed a $2 \times 2 \times 2$ between-subjects design with (benefit frame: expected vs. unexpected) and (evaluation mode: WTP vs. perceived effectiveness) as manipulated factors, and BAS as a measured factor. Participants were randomly assigned to one of the four conditions. Participants first viewed a print ad for a health supplement (an antioxidant), which claimed two main benefits: 1) supports healthy skin and 2) supports healthy eye function. In a separate study, 50 participants (29 females, mean age = 37.32 years; SD = 14.32) were asked to rate how hedonic/utilitarian the consumption of the health supplement would be on a nine-point scale (1 = Primarily utilitarian; 5 = Neutral; 9 = Primarily hedonic). Participants rated consumption of the health supplement to be neutral ($M = 5.18$; $SD = 2.54$), which was no different from the midpoint ($p = .62$).

To manipulate the benefit frame, we created two versions of the print ad. While both versions had the same layout and graphic, in one version of the print ad, one benefit was framed as unexpected, while in the other version, both benefits were framed as intentionally designed. Specifically, in the expected benefit-frame conditions, the health supplement was described as a supplement developed for supporting healthy skin and healthy eye function. The ad further indicated that consumers found the supplement to be effective in delivering both benefits. In the unexpected benefit-frame conditions, the health supplement was described as a supplement developed for supporting healthy skin. The ad further indicated that consumers found

the supplement effective in delivering the healthy skin benefit, and unexpectedly many of these consumers found it effective in improving eye health as well (see appendix for details).

Subsequent to viewing the print ad, participants evaluated the product. Unlike in study 2, in the current study participants either indicated the amount they were willing to pay (in USD) for a bottle of 60 softgel health supplements or evaluated the supplement on perceived effectiveness. This design was adopted to ensure that perceived effectiveness measures are not impacted by the participant's willingness to pay. Perceived effectiveness was measured on the following two items: 1) how effective do you think the health supplement would be in supporting healthy skin? and 2) how effective do you think the health supplement would be in supporting healthy eye function? (1 = Very ineffective, 7 = Very effective; Cronbach's $\alpha = .79$). All respondents then responded to the BAS questionnaire (Carver and White 1994), consisting of 13 items anchored on nine-point scales (1 = Strongly disagree, 9 = Strongly agree). Finally, participants responded to a few demographic questions, including age and gender.

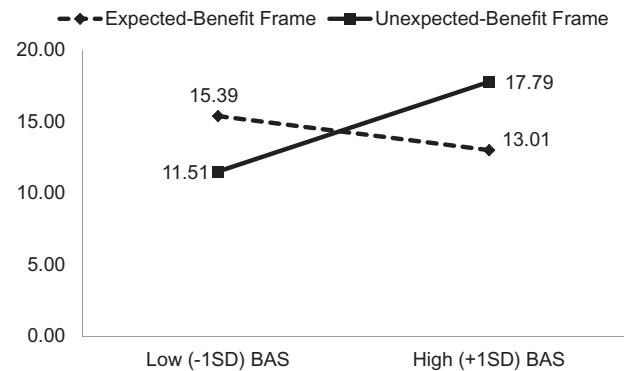
Results

Given that distributions for willingness to pay and effectiveness are significantly different from each other (Combined Kolmogorov-Smirnov test $Z = 6.4$; $d = .8$, $p < .001$), we analyzed the two variables separately.

Willingness to Pay. A regression performed on the WTP showed a significant two-way interaction between BAS and the benefit-frame ($B = 3.93$, $t(1, 129) = 2.58$, $p = .011$; see figure 2) factors. A spotlight analysis performed at one standard deviation above the mean of BAS further revealed a significant difference between the two benefit-frame conditions, such that these participants were willing to pay more when one of the benefits was framed as unexpected, compared with when the same benefit was framed as expected ($B = 4.79$, $t(1, 129) = 2.02$, $p = .045$). However, a similar spotlight analysis performed at one standard deviation below the mean of BAS revealed an insignificant effect of the benefit-frame factor ($B = -3.88$, $t(1, 129) = -1.64$, $p = .1$). Further probing the interaction using floodlight analysis (Spiller et al. 2013) revealed that at .95 standard deviation above the mean of the BAS scales, participants in the unexpected condition indicated higher willingness to pay, compared with those in the expected condition ($B = 4.58$, $t(1, 129) = 1.98$, $p = .05$). The floodlight analysis further revealed that at 1.45 standard deviation below the mean of the BAS scales, participants in the unexpected condition indicated lower willingness to pay, compared with those in the expected condition ($B = -5.84$, $t(1, 129) = -1.98$, $p = .05$).

FIGURE 2

IMPACT OF UNEXPECTED FRAMING ON WTP BY BAS (STUDY 3)



Perceived Effectiveness. A regression performed on perceived effectiveness did not reveal a significant interaction between BAS and benefit frame ($F < 1$, $p = .41$). Consistent with findings from study 2, perceived effectiveness of the product did not differ when the benefit was framed as unexpected ($M = 4.41$; $F < 1$, $p > .7$), compared with when it was framed as expected ($M = 4.49$).

Discussion

Consistent with the findings of studies 1 and 2, the findings of the current study show that framing a product benefit as unexpected led to a stronger desire for the product, compared with framing the same benefit as expected, for those who have a heightened reward sensitivity (i.e., those high on BAS). However, the unexpected-framing effect was eliminated, even directionally reversed, for those low on reward sensitivity (i.e., low on BAS). Furthermore, consistent with the findings of study 2, we found that the positive effect of unexpected framing was restricted to the desire for the product. Unexpected framing did not impact the perceived effectiveness of the product.

STUDY 4

A primary objective of the current study was to examine the robustness of the unexpected-framing effect by employing a real behavioral measure for desire in a within-participant design. Specifically, participants in this study read product descriptions for two different lotions and then chose one of the two lotions to try. For one of the two lotions, one benefit was framed as unexpected, while for the other lotion, neither of the two benefits was framed as unexpected. We predicted that consumers with a heightened reward sensitivity should be more likely to choose the

body lotion with unexpected benefit frame over the lotion for which neither of the two benefits was framed as unexpected.

Additionally, in the current study, we employed a different reward-sensitivity manipulation—a sampling task, which has been successfully used in prior research to activate reward sensitivity (Wadhwa, Shiv, and Nowlis 2008). Specifically, research has shown that a brief taste of an appetitive drink can induce a heightened reward-seeking state. In this study, therefore, following past research, we manipulated reward sensitivity by having participants sample either a small amount of an appetitive drink (Hawaiian Punch) or the same amount of a neutral drink (water; Wadhwa 2010; Wadhwa et al. 2008). Since we were interested in manipulating reward sensitivity using a sampling task, as in study 3, in this study also we used a neutral consumption context. Thus, while we were not predicting a main effect of unexpected framing, we predicted that participants are more likely to choose the lotion with unexpected framing when their reward sensitivity is heightened (i.e., when they have sampled an appetitive drink). However, when the reward sensitivity is not heightened (i.e., when people sample a neutral drink), any positive effect of unexpected framing should be eliminated.

Design and procedure

One hundred nineteen students (63 females), recruited from a large West Coast university, participated in this study. The study followed a 2 (benefit frame: expected vs. unexpected) \times 2 (reward sensitivity: heightened vs. not heightened) mixed design, with benefit frame manipulated within subject and reward sensitivity manipulated between subjects. Participants were randomly assigned across the two reward-sensitivity conditions.

A sampling booth was set up in one of the main squares of a large West Coast university campus. The study was introduced to participants as a product sampling survey. In the first part of the task, participants engaged in a taste test, which was designed to manipulate reward sensitivity. Participants sampled either .75 ounces of Hawaiian Punch (reward sensitivity heightened) or .75 ounces of water (reward sensitivity not heightened; adopted from Wadhwa 2010; see also Wadhwa et al. 2008). Participants then evaluated the sampled drink on three seven-point scale (1 = not at all, 7 = very much) items (tasty, enjoyable, and pleasant).

Subsequent to the taste test, participants moved on to another purportedly unrelated sampling task for a different product (a body lotion). A separate study with 50 participants (34 females; mean age = 34.32; SD = 12.60) confirmed that consumption of the body lotion was perceived to be neutral. Specifically, participants in this study were asked to indicate whether the consumption of a body lotion, which improved the quality of skin, was hedonic or utilitarian on a nine-point scale (1 = Primarily utilitarian; 5

= Neutral; 9 = Primarily hedonic). Participants rated the consumption of body lotion to be neutral ($M = 4.64$; $SD = 2.27$), which was no different from the midpoint ($p = .27$).

Participants were informed that we were market-testing two body lotions for a research company and to avoid any potential contamination of the results, they could try only one of the two lotions. Participants first read the product descriptions of the two body lotions (labeled “Body Lotion A” and “Body Lotion B”). Importantly, the two body lotions had two versions of product descriptions. In one of the two versions, both the benefits were described as expected (expected benefit frame), while in the other version, one of the two benefits was framed as unexpected (unexpected benefit frame; see appendix for details). Therefore, in total, there were four different product descriptions and each participant saw two (one unexpected version and one expected version) of the four product descriptions. Specifically, participants were randomly assigned to see either the unexpected version of body lotion A and expected version of body lotion B, or the expected version of body lotion A and the unexpected version of body lotion B. Additionally, presentation order of the two body lotions was counterbalanced.

Once participants had read the product descriptions, they chose one of the two body lotions they wanted to try. The body lotion was the same across conditions. Subsequent to sampling the body lotion, in order to examine if unexpected framing impacted the experienced liking of the product, participants evaluated the lotion on how pleasant they found it to be and how effective they thought it would be using a seven-point scale (1 = Not at all, 7 = Very much). Finally, participants were thanked. At this stage, the experimenter noted the gender of the participants.

Results

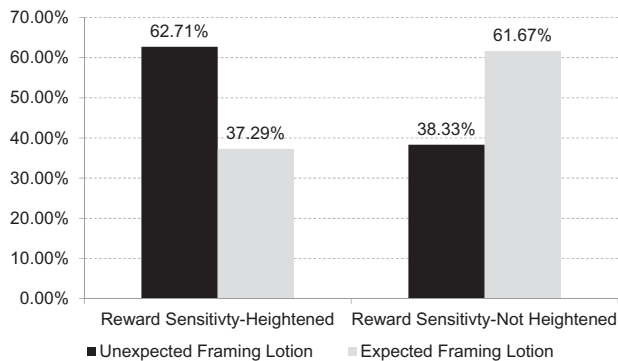
We first report our results on drink evaluation, followed by our findings on choice and liking of the body lotion.

Drink Evaluation. We created a composite measure of how tasty the drink sample was by averaging three measures (tasty, enjoyable, and pleasant; $\alpha = .93$). As expected, Hawaiian Punch ($M = 5.44$) was evaluated as significantly more tasty than water ($M = 3.92$; $F(1, 117) = 39.32$, $p < .001$).

Lotion Choice. There was no difference in the choice of the body lotion (lotion A vs. lotion B; $\chi^2 < 1$, $p > .6$) across reward-sensitivity conditions; thus, the data were collapsed across the two lotion types. As predicted, a logistic regression (reward-sensitivity-not-heightened condition coded as 0, and reward-sensitivity-heightened condition coded as 1) revealed a significant impact of reward sensitivity on the likelihood of choosing the lotion with the unexpected-benefit frame (coded 1) over the lotion with

FIGURE 3

REWARD SENSITIVITY AND CHOICE OF LOTION (STUDY 4)



the expected-benefit frame (coded 0; Wald $\chi^2 = 6.93$, $p = .008$, odds ratio = 2.71; Nagelkerke R-square = .078; see figure 3). Specifically, the likelihood of choosing a lotion with an unexpected-benefit frame over a lotion with an expected-benefit frame was significantly higher for participants whose reward sensitivity was heightened (i.e., those who had sampled Hawaiian Punch; 62.71%), compared with those whose reward sensitivity was not heightened (i.e., those who had sampled water; 38.33%).

Next, we examined the constant coefficients to understand the pattern of choices within each reward-sensitivity condition. In a logistic regression with the reward-sensitivity-heightened condition as the reference category, the constant coefficient was significant (Wald $\chi^2 = 3.73$, $p = .053$), indicating that within the reward-sensitivity-heightened condition, as expected, participants were more likely to choose the lotion with the unexpected-benefit framing (62.71%) over the lotion with the expected-benefit framing (37.29%; Wald $\chi^2 = 3.73$, $p = .053$). Interestingly, while not predicted, in another logistic regression with the reward-sensitivity-not-heightened condition as the reference category, the constant coefficient was marginally significant (Wald $\chi^2 = 3.21$, $p = .073$), indicating that when the reward sensitivity was not heightened, participants were marginally more likely to choose the lotion with the expected-benefit framing (61.67%) over the lotion with the unexpected-benefit framing (38.33%).

Liking. We further examined whether unexpected versus expected framing impacted liking of the lotion. A one-way ANOVA revealed that benefit framing did not impact how effective ($F < 1$, $p = .83$) or how pleasant participants found the lotion to be ($F < 1$, $p = .49$).

Discussion

Study 4 provides strong support suggesting that unexpected framing can positively impact prospective

consumers' preference for the product. Findings of the current study show that even when participants could simultaneously view both the lotions—the lotion for which one of the two benefits was framed as unexpected and the lotion for which neither of the two benefits was framed as unexpected—those with a heightened reward sensitivity chose the body lotion with the unexpected framing. Interestingly, when the reward sensitivity was not heightened, choice for the option with both the benefits framed as expected was directionally higher. One reason for this could be that when people's sensitivity to reward cues is not heightened and, therefore, they are not motivated to explore the environment for other potential rewards, they prefer to go with the option that they believe was specially designed to provide the certain benefits. Finally, consistent with the findings of the previous study, the unexpected-benefit framing impacted only desire for the lotion, not liking for it; that is, unexpected framing did not impact the experienced pleasantness and perceived effectiveness of the lotion.

STUDY 5

The findings of studies 1 through 4 show that unexpected-benefit framing can positively impact product desire. Across these studies, the benefit that was framed as unexpected (e.g., even toning) was congruent with the product category (e.g., sunscreen lotion). That is, while the benefit was framed as unexpectedly discovered, it was not something unexpected of the product category. However, as in the Murad example noted in the introduction, it is possible for brands to unexpectedly discover benefits that are incongruent with the product category; that is, these benefits are not expected of the product category. In this study, therefore, we focused on a managerially important question: could the level of congruity between the benefit framed as unexpected and the core product category moderate the unexpected-framing effect? Our prediction was that when the product benefit is incongruent with the product category and therefore is already unexpected, then any additional benefit of unexpected framing found in the previous studies should be attenuated.

Design and procedure

Three hundred ninety-three US-based participants, recruited from MTurk, participated in the study. Prior to analyses, five participants who had taken the study multiple times were removed, leaving us with a total sample of 388 participants (176 females; mean age = 35.89 years; SD = 12.5).

The study followed a 2 (benefit frame: expected vs. unexpected) \times 2 (benefit congruency: congruent vs. incongruent) between-subjects design. Participants were randomly assigned to the four conditions. As in study 2 (hedonic consumption conditions), participants were asked

to imagine that they were buying a body lotion for an upcoming vacation.

Participants were shown a description of a fictitious body lotion, Motte. The product description presented two benefits of the lotion. While skin firmness was presented across conditions, the second benefit of the lotion varied based on the benefit-congruency factor. In the congruent-benefit conditions, the second benefit presented was “even toning.” In the incongruent-benefit conditions, the second benefit presented was “aids in sleeping better.” These two benefits were chosen based on a pretest. Specifically, 40 participants (21 females, mean age = 34.33; SD = 11.07) evaluated the two benefits of even toning and aids in sleeping better (presentation order was counterbalanced) on the following three items measuring the level of congruity between the benefit and the product category: 1) How likely is it for a body lotion to provide the benefit of even toning/aids in sleeping better? (1 = Not at all likely; 7 = Very likely); 2) How much do you expect a body lotion to provide the benefit of even toning/aids in sleeping better? (1 = Not at all; 7 = Very much) and, 3) How compatible is the benefit of even toning/aids in sleeping better with the product category of body lotion? (1 = Not at all compatible; 7 = Very compatible; $\alpha = .93$). A paired sample *t*-test revealed that the benefit of “aids in sleeping better” was perceived as significantly less congruent with the product category of lotions ($M = 2.96$; $SD = 1.52$), compared with that of even toning ($M = 4.33$; $SD = 1.47$ $t(39) = 4.71$, $p < .001$). Further, one-sample *t*-tests revealed that the perception of congruency for the “aids in sleeping better” benefit is significantly below the midpoint ($t(39) = -4.34$, $p < .001$), thus demonstrating that it is perceived as an incongruent benefit, given the category of body lotions.

To manipulate the benefit frame, we described either both the benefits communicated in the advertisement as intentionally designed (expected-benefit frame) or one of the two benefits, even toning in the congruent condition and sleep aid in the incongruent condition, as unexpected (unexpected-benefit frame). Subsequent to reading the product description, all participants indicated their WTP (in USD) for a 20 ounce bottle of the body lotion. Finally, participants responded to a few demographic questions, including age and gender.

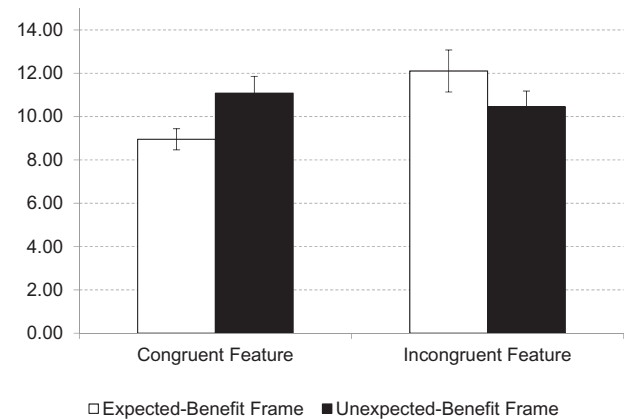
Results

Prior to analyses, we excluded one participant who had clearly given a random response. Specifically, this participant stated a WTP of \$1,500 (19 standard deviations above the mean) for the lotion. Including data from this participant does not change the pattern of results.

Because we used an open-ended measure for WTP in the current study, which was not bounded at the upper end, we first performed a square root transformation ($y = \sqrt{f + 1/2}$) on the WTP data before submitting them to

FIGURE 4

IMPACT OF UNEXPECTED FRAMING ON WTP BY BENEFIT CONGRUENCY (STUDY 5)



analysis (Bandura, 1965; Carey 2013; Zar 1999). These results remain unchanged when we do not adjust these variables for skew. For ease of understanding, the means and standard deviations reported are untransformed. A two-way ANOVA revealed, as predicted, a significant interaction between the benefit-frame and benefit-congruency factors ($F(1, 383) = 7.095$, $p = .008$). The main effects of the benefit-frame factor ($p > .7$) and the benefit-congruency factor ($p > .2$) were not significant.

An examination of the interaction revealed that when the benefit was congruent with the product category, participants in the unexpected-benefit-frame condition indicated a higher WTP ($M_{\text{unexpected}} = 11.08$, $SD_{\text{unexpected}} = 7.56$), compared with those in the expected-benefit-frame condition ($M_{\text{expected}} = 8.95$, $SD_{\text{expected}} = 4.74$; $F(1, 383) = 4.34$, $p = .038$, $d = .34$); see figure 4. However, when the benefit was incongruent, there was no difference in WTP between the expected and unexpected-benefit-frame ($M_{\text{expected}} = 12.10$, $SD_{\text{expected}} = 9.59$ vs. $M_{\text{unexpected}} = 10.46$, $SD_{\text{unexpected}} = 7.25$; $F(1, 383) = 2.82$, $p = .094$) conditions.

Discussion

The findings of this study show that unexpected-benefit framing is a more effective communication approach, but only when the unexpected benefit is congruent with the product category. When the benefit framed as unexpected is incongruent with the target product category and therefore is perceived as an unexpected benefit given the product category, any positive effect of the unexpected-framing effect is eliminated.

These findings further help us rule out the alternative account, which would suggest that an unexpected benefit is likely to be perceived as a free benefit, which is in addition

to the promised benefit. A free-benefit account, however, would predict the unexpected framing to increase preference for the product regardless of which benefit (congruent or incongruent) is framed as unexpected. However, our findings show that an unexpected-benefit framing positively impacts consumer preferences only when the benefit framed as unexpected is congruent with the product category.

STUDY 6

Thus far, we have examined the impact of framing a benefit as unexpected versus not on product desirability. In the current study, we examine the impact of framing an undesirable product characteristic (e.g., a side effect) as unexpected versus not on product desirability. Research suggests that while anticipating positive outcomes, such as rewards, enhances desire for the target when consumers' reward sensitivity is heightened (Amodio et al. 2008; Carver and White 1994; Gray 1987), anticipating aversive outcomes, such as losses, could lead to avoidance behaviors for consumers who have a heightened sensitivity to losses (Amodio et al. 2008; Carver and White 1994). If a cue associated with unexpected outcomes heightens the anticipated utility of the impending outcome, then it is likely that anticipating an aversive outcome should reduce desirability for the target product among those who have a heightened sensitivity to negative outcomes.

One personality variable that taps into sensitivity to aversive outcomes is the behavioral inhibition system (BIS; Carver and White 1994). Those high on the BIS tend to pay more attention to the aversive cues in the environment and thus show avoidance behaviors when anticipating an aversive outcome, while those low on the BIS tend to focus more on the appetitive outcomes rather than on the aversive outcomes (Avila 2001; Gray 1987). Therefore, we predicted that framing a side effect as unexpected could negatively impact product desirability for those who have a heightened BIS, but not for those who are low on BIS.

Design and procedure

One hundred fourteen female participants (mean age = 20.13 years; $SD = 1.16$) recruited from a large Asian university completed this study. We decided to restrict our sample to females only because a pretest conducted with 33 participants (13 females), recruited from the same population, revealed a significant gender difference. Male participants indicated a significantly lower likelihood to try a collagen supplement ($M = 2.68$; $SD = 1.60$), compared with female participants ($M = 4.27$; $SD = 1.56$; $F(1, 31) = 7.96$, $p = .008$).

Side-effect frame (expected vs. unexpected) was manipulated between subjects and BIS was a measured variable. Participants were randomly assigned to one of the two frame

conditions. Participants read a product description of a fictitious, purportedly newly launched, collagen supplement brand, Perfect Choice. In both the conditions, the product description first informed participants about the benefits of Perfect Choice; participants were informed that it increases skin firmness and texture, giving a youthful appearance through skin rejuvenation. Additionally, participants were informed of the potential side effects of Perfect Choice. In the expected-frame condition, participants were told that some users have reported experiencing itchy skin and a lingering aftertaste in their mouth. In the unexpected-frame condition, participants were told that some users have reported experiencing itchy skin, and unexpectedly, some users have reported experiencing a lingering aftertaste in their mouth. Thus, in this study, participants read both the benefits as well as potential harmful aspects of the product.

Subsequent to reading the product description, participants indicated their likelihood to purchase Perfect Choice, if it were made available in the local market (1 = Not likely at all, 7 = Very likely). We measured desire using likelihood of purchasing the collagen supplements in this study because collagen is a relatively new product, and people typically do not have a good idea of what would be a good price for collagen supplements. Finally, participants responded to the complete BIS questionnaire (Carver and White 1994), consisting of seven items, anchored on nine-point scales (1 = Strongly Disagree, 9 = Strongly Agree). In addition to the BIS measure, we included the BAS measure, consisting of 13 items. Given that the feature framed as unexpected in the current study was a side effect, we predicted that BAS should not interact with the frame factor. Moreover, since only those high on BIS are more likely to direct their attention to the negative cues (side effects in this case), we were expecting the unexpected-framing effect to be demonstrated only among those high on BIS. Thus, while we were expecting a signification interaction between BIS and unexpected framing, we were not expecting a significant main effect of unexpected framing.

Results

A regression performed on purchase likelihood showed a significant interaction between the BIS measure and the frame factor ($B = -.43$, $t(1, 110) = -1.82$, $p = .071$; see figure 5). A spotlight analysis performed at one standard deviation above the mean of BIS revealed a significant difference between the two frame conditions, such that these participants were willing to pay less when one of the two side effects was framed as unexpected, compared with when the same side effect was framed as expected ($B = -.80$, $t(1, 110) = -2.05$, $p = .042$). However, a similar spotlight analysis performed at one standard deviation below the mean of BIS revealed a nonsignificant effect of the frame factor ($B = .23$, $t(1, 110) = .59$, $p = .56$). As predicted, a regression performed on the purchase likelihood showed a

nonsignificant interaction between the BAS measure and the frame factor ($t < 1$). Further probing the interaction using a floodlight analysis (Spiller et al. 2013) revealed that at .78 SD above the mean of the BIS scale, participants in the unexpected-frame condition expressed a lower intention to purchase, compared with those in the expected-frame condition ($B = -.69$, $t(101) = -1.98$, $p = .050$).

Discussion

The findings of this study show that unexpected framing does not always positively impact product desirability. To elaborate, when the product feature framed as unexpected is a negative feature, such as a side effect, unexpected framing can reduce product desirability among those who have a heightened sensitivity to impending negative outcomes.

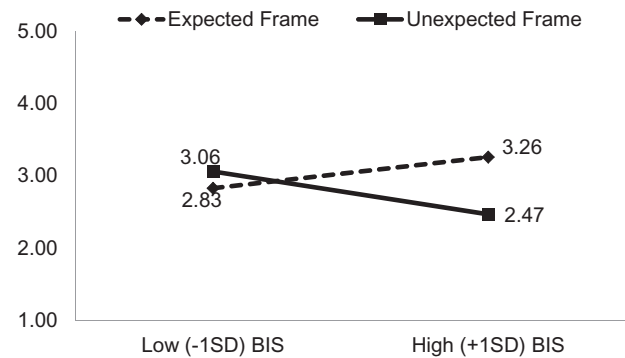
GENERAL DISCUSSION

Companies often engage in prelaunch product testing, which involves handing out product samples to consumers to test. During the course of such product testing, oftentimes participating consumers discover that the sampled product can deliver additional benefits that were originally unintended. One question that arises is, how should marketers communicate benefits that are unexpectedly delivered by a product? Should these benefits be communicated as benefits that consumers should have expected from the product or should these benefits be presented as unexpected? The present studies proffer answers to this question.

Findings from the current studies show that information about whether a product benefit is expected versus unexpected can play an important role in impacting preference for the product. Specifically, our findings show that when consumers have a heightened sensitivity to rewards, framing a product benefit as unexpected can positively impact the desire for the product, compared with when the same benefit is presented as an intentionally designed benefit. The positive effect of unexpected-benefit framing on consumer desire was documented across varied desire measures, such as willingness to pay, product choices, and actual purchase decisions in the marketplace. While unexpected-benefit framing positively impacted desire for the product when the benefit framed as unexpected was congruent with the product category, our findings show that when the benefit framed as unexpected is incongruent with the product category, any positive effect of unexpected framing is eliminated. Finally, the findings of study 6 show that framing a negative product feature, such as a side effect, as unexpected can negatively impact product desirability for those consumers who have a heightened sensitivity to aversive outcomes (i.e., those who are high on the BIS).

FIGURE 5

IMPACT OF UNEXPECTED FRAMING ON WTP BY BIS (STUDY 5)



In documenting the unexpected-framing effect, our findings make important contributions to research on reward motivation. The concept of reward motivation is central to understanding what drives consumer behavior. Past research has examined different factors that can impact one's desire for a reward. For example, factors such as the magnitude of a reward (Atkinson 1957; Locke and Latham 2006), consumption context, social presence (Argo, Dahl, and Manchanda 2005), outcome of a competition (Reeve, Olson, and Cole 1985; Wadhwa and Kim 2015), and deprivation state (Briers and Laporte 2013) have all been shown to impact one's desire for the target reward. In this research, we propose another important marketing cue that can impact the desire for a reward—unexpectedness of a reward. Findings of the current research show that mere perception of unexpectedness of a product benefit can positively impact one's desire for the product when one is in a heightened reward-seeking state. Moreover, our findings show that when a side effect is framed as unexpected, compared with expected, prospective consumers with enhanced sensitivity to losses show a reduced desire for the product. By showing when unexpected framing can help versus hurt consumer preferences, the current findings also contribute to research on product framing.

Plausible but unlikely causes of the unexpected-Framing effect

The unexpected-framing effect is an interesting phenomenon that should be further explored. In the current research, we did not aim to tease apart different explanations underlying the unexpected-framing effect. In this section, we consider mechanisms that seem to relate to the proposed unexpected-framing effect in some aspects. As we discuss next, however, the unexpected-framing effect also diverges from these mechanisms in multiple ways.

Unexpected Benefit as a Free Gift. Chandon, Wansink, and Laurent (2000) examined promotions in the context of a duopoly and found that for high-equity brands (i.e., a national, well-known brand), monetary promotions (e.g., price cuts) are more effective for utilitarian than for hedonic products. Moreover, they propose that nonmonetary gifts provide relatively more benefit for hedonic than for utilitarian products. There was no effect of promotions for low-equity (i.e., lesser-known) brands. One could argue that an unexpected benefit is likely to be perceived as a “nonmonetary free gift,” thereby increasing preference for the product in a hedonic choice context. However, this is unlikely for several reasons, which we discuss next.

First, the brands used in the current studies were either a low-equity, local brand (as in the field study) or were purportedly newly launched brands (in studies 2 through 6). Given our use of brands that were not high in equity, the findings of Chandon et al. (2000) would predict that unexpected framing should have no effect on consumers’ desire for the product. In contrast, across studies, we find a positive effect of unexpected framing. Second, while Chandon et al.’s (2000) research proposed that nonmonetary gifts should be significantly more effective in enhancing preference for hedonic products, compared with for utilitarian products, they did not find evidence for this proposition; their results revealed that nonmonetary free gifts are effective in increasing preference for both hedonic as well as utilitarian products. In the current research, unexpected-benefit framing enhanced product preference, but only when the consumption context was hedonic, not when the consumption context was utilitarian. Third, our findings show that even when consumers simultaneously view the options and are aware that they would get the same benefits from both options, consumers with a heightened reward sensitivity choose the option with unexpected framing. Finally, the current research findings show that unexpected framing of a side effect can negatively impact product desire; these findings cannot be explained using existing research on free gifts as promotions (Chandon et al. 2000).

Unexpected Benefit as a Surprise. The unexpected-framing effect also shares kinship with research on surprises, which shows that experiencing an unexpected, compared with an expected, gain can enhance the experienced value of the gain (Mellers et al. 1997, 1999). Specifically, this research suggests that unexpectedness can lead to feelings of surprise, which enhances the intensity of affect. Thus, when the surprise is pleasant, it positively impacts the experienced value of the target reward (Mellers et al. 1997, 1999). Providing support for this affect-related account, Mellers et al. (1999) have shown that people find receiving an unexpected reward to be more pleasurable, compared with receiving an expected reward of a higher magnitude. Consistent with these findings, Chatterjee

(2007) found that consumers were more satisfied with their purchase of a USB memory stick when they received a surprise coupon for their next purchase, compared with when they received an advertised coupon. Similarly, Heilman et al. (2002) argue that receiving surprise coupons, compared with not receiving any coupon, at a retail store can put consumers in a positive mood, thereby increasing their unplanned purchases. In sum, research on surprises has focused on the experienced value of unexpected versus expected gains, showing that people’s liking for an unexpected gain is more than their liking for an expected gain.

It is likely that a benefit framed as unexpected is perceived as a pleasant surprise, which thereby could have positively impacted consumers’ evaluation of the product. While a plausible account, our findings cannot be fully explained by a surprise-related account for different reasons. First, research on surprise rewards would suggest that the positive mood resulting from vicariously experiencing an unexpected benefit should enhance the consumer’s overall evaluation of the product. However, findings across studies in the current research show that the unexpected-framing effect is specific to desire-related evaluations, such as WTP, product purchases, and choices, but does not impact non-desire-related evaluations, such as perceived effectiveness or experienced liking of the product. This specificity of effect on desire suggests that the unexpected-framing effect is unlikely to be the result of a positive mood state resulting from experiencing a pleasant surprise.

Second, research on surprise would suggest that the elevated mood should positively impact product evaluations, regardless of the consumer’s reward sensitivity. However, across studies, our findings show that the unexpected-framing effect is moderated by reward sensitivity, such that framing a benefit as unexpected positively impacts product preferences, but only when reward sensitivity is heightened.

Finally, a surprise-related account would suggest that a pleasant benefit that is incongruent with the core product benefit should also lead to a pleasant surprise and therefore positively impact product evaluations. However, our findings show that the unexpected-framing effect is eliminated when the benefit framed as unexpected is not related to the core benefit. These findings therefore suggest that a surprise-related account cannot fully explain the unexpected-framing effect documented in the current research.

Unexpected Benefit as a Unique Benefit. Recent research (Reich, Kupor and Smith 2017) suggests that when a product is accidentally made, as opposed to intentionally made, people are likely to desire the product more. To the extent that accidental products are perceived as unexpectedly designed, these findings are consistent with the unexpected-framing effect documented in the current research. However, despite this similarity, there are notable

differences. First, the current research focuses on the impact of framing a single benefit of a product as unexpected versus not, as opposed to framing an entire product as accidentally made versus not, on product desire.

Second, our argument suggests that a benefit framed as unexpected can act as a cue leading people to anticipate other potential benefits from the product, which thereby increases product desire. In contrast, Reich et al. (2017) argue that accidentally made products are perceived as more improbable and therefore unique; the perceived uniqueness enhances the desire for the product. Their findings show that the accidental discovery effect is attenuated when the outcome of the accident is not perceived as improbable or unique. In contrast, in the current research, the benefits framed as unexpected were common, not unique, product benefits (such as even toning). In fact, the findings of the current research show that when the unexpected benefit is perceived as improbable, the unexpected-framing effect is attenuated; this finding is inconsistent with those documented in the Reich et al. (2017) article.

Finally, Reich et al. (2017) show that even when the outcome of the accident is negative, people perceive it to be more unique and therefore desire it more. In contrast, the current research shows that unexpected framing can negatively impact desire when a potentially negative product characteristic is framed as negative. While these findings support our argument that framing a benefit or a negative product characteristic as unexpected can lead to anticipation of other similar outcomes from the product, they are inconsistent with the uniqueness argument. In sum, the perceived uniqueness argument underlying the accidental discovery effect proposed by the Reich et al. (2017) article is unlikely to explain the unexpected-framing effect documented in the current research.

Possible driver of the unexpected-framing effect

Our findings show that framing a benefit as unexpected can positively impact consumer preferences when consumers' motivation to seek rewards is heightened (e.g., when the consumption context is hedonic). Moreover, for consumers who had a heightened motivation to avoid losses, framing a side effect of a product as unexpected led to an enhanced desire to avoid the target product, compared with when the same benefit was framed as expected. These findings are consistent with evidence in neuroscience, which suggests that when one has a high motivation to seek rewards, experiencing an unexpected reward leads to enhanced dopaminergic activity in brain areas involved in reward anticipation, compared with experiencing an expected reward (Glimcher 2011).

Based on a synthesis of findings from current research and findings in the domain of neuroscience, we propose that exposure to a cue predicting an unexpected outcome

might activate an approach or an avoidance motivation, depending on the valence of the outcome. To elaborate, when consumers either experience something unexpected or discover an outcome through the experience of others, it could signal environmental unpredictability (Murty and Adcock 2013). When the expectancy violations are in the positive direction (i.e., if the unexpected outcome is better than expected), consumers might anticipate that there could be other potential rewards they could get, leading to approach behaviors toward stimuli associated with expectancy violations. On the other hand, when the expectancy violations are in the negative direction, it might signal other potential losses they could suffer and thus energize avoidance behaviors away from the stimuli associated with expectancy violation.

Approach and avoidance processes have been considered important for an organism to successfully adapt to the environment (Tooby and Cosmides 1990). While approach behaviors induced in response to an unexpected benefit cue can facilitate consumers' reward-seeking behaviors, avoidance behaviors induced in response to an unexpected loss cue can help consumers prevent losses. We should highlight an important feature that underlies the approach-avoidance conceptualization outlined above. Given that expectancy violations in the positive direction can aid people in their reward pursuit, such expectancy violations should be more salient and therefore lead to approach behaviors only when people have a heightened drive to seek rewards. Similarly, expectancy violations in the negative direction should be more salient and therefore lead to avoidance behaviors only when the drive to avoid losses is heightened. Indeed, our findings from studies 2 through 5 indicate that the effect of the unexpected-framing effect is demonstrated when reward sensitivity is either situationally or dispositionally heightened. Similarly, unexpected framing was found to reduce product desire when the product feature framed as unexpected was undesirable, but only for those who are high on the BIS. The approach-avoidance motivation in response to unexpected cues raises interesting avenues for future research, as we discuss next.

Directions for future research

The current research raises interesting questions for future research. First, in the current research we focus on the impact of framing a specific benefit as unexpected on the desire for the target product. However, research (Elliot 1999; see also Wadhwa 2010; Wadhwa and Kim 2015; Wadhwa et al. 2008) suggests that approach and avoidance behaviors could be specific to a motive (e.g., specific to seeking a target product, which helps meet the motive) or more general in nature (e.g., seeking anything positive, even items unrelated to the product).

Therefore, it is likely that an unexpected cue might induce approach-avoidance motivation that is more general, rather than motive-specific. For example, exposure to an unexpected benefit cue, compared with an expected benefit cue, might lead to more novelty seeking in search of potential rewards in unrelated domains. Similarly, exposure to an unexpected loss cue might reduce novelty seeking in unrelated domains due to an increased anticipation of potential losses.

Second, while anticipation of a reward could lead consumers to explore the source for other potential rewards, these kinds of reward-seeking behaviors are also time-consuming and therefore could be perceived as costly (March 1991). It would be interesting to examine when reward-seeking behaviors induced in response to an unexpected positive cue would be perceived as a cost versus a benefit. One possibility is that when consumers do not have a motivation to seek rewards, they might find exploring the source for other potential rewards costly and therefore prefer a product more when its benefits are framed as ones that should be expected from the product. Some support for this proposition comes from the findings of studies 3 and 4, which show that when reward sensitivity was not heightened, consumers directionally preferred the product with both the benefits framed as expected more than the product with one of the benefits framed as unexpected.

Marketing implications

Our findings have important marketing implications. An extensive body of research has focused on different factors that can impact communication effectiveness. For example, source congruity (Kirmani and Shiv 1998), processing fluency (Schwarz, Newman, and Leach 2016), and the number of product benefits communicated in the message (Shu and Carlson 2014) have all been shown to impact communication effectiveness. Despite this extensive body of research, it is not clear how product benefits that companies often unexpectedly discover in the product testing stages, or even through their initial users in the post-launch stage, should be communicated. In fact, scanning through Amazon reviews led us to many product reviews wherein initial consumers of a product discussed the unexpected benefits delivered by the product. For example, one such review talked about omega-3 pills, which the consumer had initially purchased for cardiovascular health but unexpectedly found to be effective at skin softening. Similarly, another consumer discussed a moisturizing facial serum that was unexpectedly found to be effective at removing scars, while yet another review talked about a weight-loss supplement with the unexpected benefit of aiding sleep. Given the abundance of cases wherein companies or users

might find that a product can deliver unintentional benefits, from the company's standpoint it is important to understand how to communicate these benefits. To the best of our knowledge, this is the first article that provides guidance in such situations.

The current research shows that rather than communicating all possible product benefits as expected, communicating some of the benefits as unexpectedly found may be a better strategy for enhancing desire for the product. Additionally, marketers can manage this communication process by narrating a brand story, discussing how some product benefits had been unexpectedly found. Marketers could also launch promotions to facilitate conversations among consumers to share their discovery of unexpected uses of their products, which is especially important in today's digital world, wherein consumers are increasingly becoming important marketing agents (Chen and Kirmani 2015).

Our findings related to reward sensitivity provide further practical implications. Specifically, findings from the current research show that unexpected framing positively impacts product desire when consumers are focused on the hedonic aspects of consumption. There are many cues in the environment that can make consumers focus on the hedonic aspects of consumption. For example, a brand's advertisement could expose consumers to hedonic cues such as romantic images (Ma and Gal 2016; Monga and Gürhan-Canli 2012) or food images (Geyskens et al. 2008), the consumer's goal could be hedonic (Wadhwa and Zhang 2015), or the brand's positioning could make consumers think of hedonic consumption. In such cases, marketers can benefit from presenting some of the benefits of the advertised product as unexpectedly found.

DATA COLLECTION INFORMATION

The second and fourth authors supervised the collection of data for the first study (fall 2016) by research assistants in coordination with the WeChat seller. The second author collected data for the second study (winter 2012), third study (spring 2013), and fifth study (winter 2016) on Amazon Mechanical Turk. The second author supervised the collection of data for the fourth study by research assistants at a California State University in the fall of 2014. The second author supervised the collection of data for the sixth study by research assistants at Hong Kong University of Science and Technology in the spring of 2017. The first two authors analyzed these data.

APPENDIX: STIMULI USED FOR STUDIES 1 TO 6

ADVERTISEMENT (STUDY 1)*

Unexpected Framing-Present

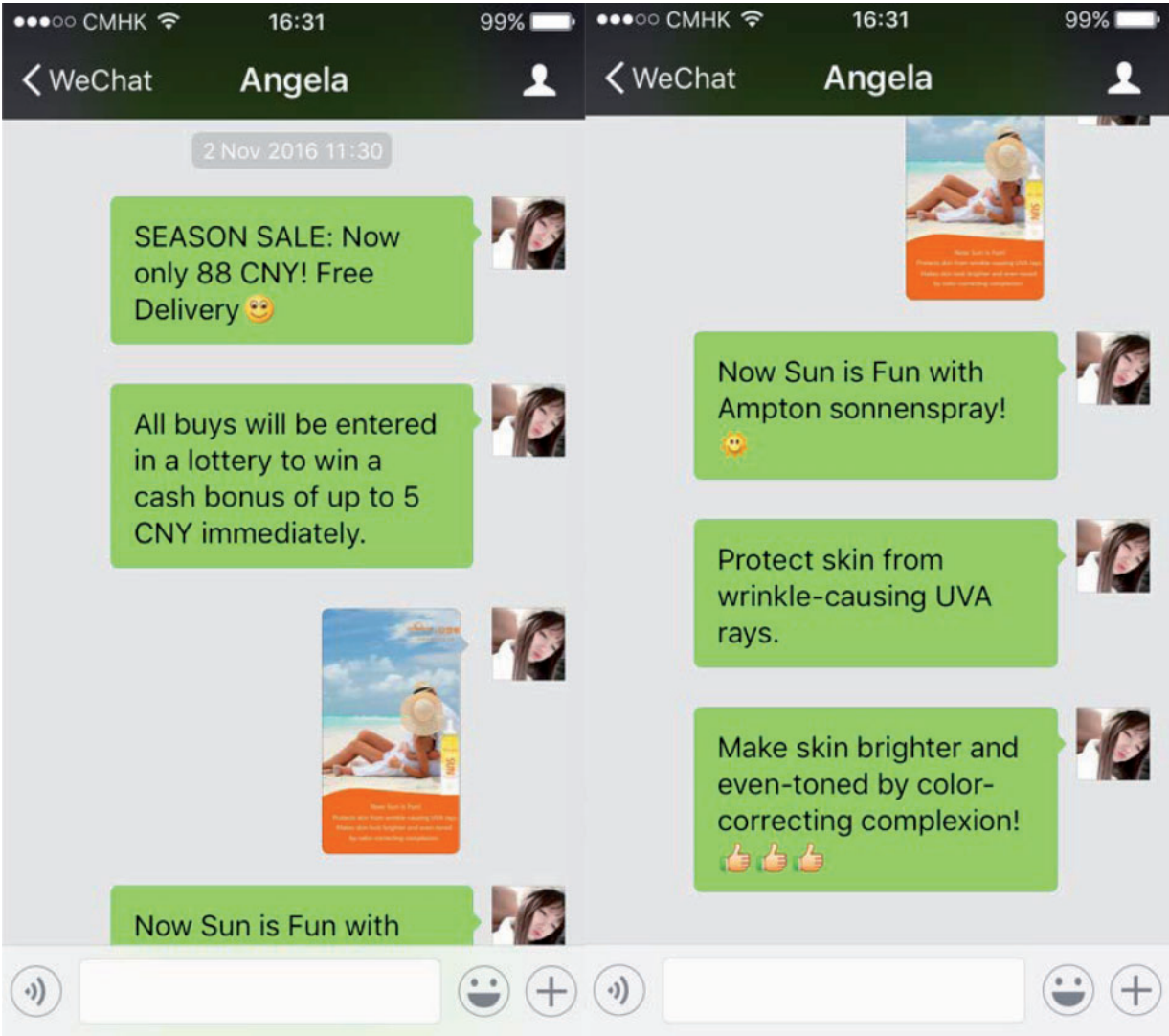


Unexpected Framing-Absent



*The original advertisements were presented in Mandarin and the images used in the advertisement were displayed in color. The advertisements displayed above are the translated versions.

AN ILLUSTRATION OF MESSAGE DELIVERED BY THE SELLER (STUDY 1)*



*The actual messages were delivered in Mandarin.

PRODUCT DESCRIPTION (STUDY 2)

Unexpected Framing: Present

A company named *FIRST* has developed a new anti-aging sunscreen made of natural ingredients that is expected to protect skin from wrinkle-causing UVA rays. Consumers have found the new sunscreen to be effective in shielding against the wrinkle-causing UVA rays and unexpectedly have also found it effective in making their skin look flawless and radiant by color-correcting their complexion.

Unexpected Framing: Absent

A company named *FIRST* has developed a new anti-aging sunscreen made of natural ingredients that is expected to protect skin from wrinkle-causing UVA rays and make it look brighter and even-toned by color correcting complexion. Consumers have found the new sunscreen to be effective in both shielding against the wrinkle-causing UVA rays and making their skin look flawless and radiant, as expected.

ADVERTISEMENT (STUDY 3)*

Benefit Frame—Unexpected



Powerful Antioxidant For Skin

NM® Astaxanthin is developed to help support healthy skin. Astaxanthin is a naturally occurring carotenoid in some fish and algae that, like several of the other carotenoids, has powerful antioxidant properties, and offers health benefits for the skin. Consumers who have taken NM® Astaxanthin consistently for 6 weeks have found their skin to be healthier and clearer. Also, unexpectedly many of these consumers reported that they have found improvement in eye health since they started to take NM® Astaxanthin.

Benefit Frame—Expected



**Powerful
Antioxidant
For Eye & Skin**

NM® Astaxanthin is developed to help support healthy eye function and healthy skin. Astaxanthin is a naturally occurring carotenoid in some fish and algae that, like several of the other carotenoids, has powerful antioxidant properties, and offers health benefits for the eyes and skin. Consumers who have taken NM® Astaxanthin consistently for 6 weeks have reported improvement in eye health and found their skin to be healthier and clearer.

*The images used in the advertisements were displayed in color

PRODUCT DESCRIPTION (STUDY 4)

Lotion A: Benefit Frame—Unexpected

This lotion is developed with essential oils and Kombucha extract, which make the skin soft. Consumers who have used the body lotion consistently found it to be effective in making the skin soft. Unexpectedly, these consumers also found their skin tone to have improved.

Lotion A: Benefit Frame—Expected

This lotion is developed with essential oils and extracts from Kombucha, which make the skin soft and even-toned. Consumers who have used the body lotion consistently found it to be effective in making the skin soft and found their skin tone to have improved

Lotion B: Benefit Frame—Unexpected

This lotion contains natural Shiitake complex and vitamin A, which improves skin firmness. Consumers who have used the body lotion regularly found a visible improvement in skin firmness. Unexpectedly, these consumers also felt their skin was looking more radiant.

Lotion B: Benefit Frame—Expected

This lotion contains natural Shiitake complex and vitamin A, which improves skin firmness, and helps make the skin look more radiant. Consumers who have used the body lotion regularly found a visible improvement in skin firmness. These consumers also felt their skin was looking more radiant.

PRODUCT DESCRIPTION (STUDY 5)

Expected Framing—Congruent Feature

Motte is a new body lotion, made of natural ingredients including Activate Natural Shitake Complex and Vitamin B3. *Motte* is designed to improve your skin's firmness and make it look even-toned. Consumers who used the *Motte* body lotion consistently for over 6 weeks found that their skin's firmness was visibly improved and they also found that their skin looked more even-toned.

Unexpected Framing—Congruent Feature

Motte is a new body lotion, made of natural ingredients including Activate Natural Shitake Complex and Vitamin B3. *Motte* is designed to improve your skin's firmness. Consumers who used the *Motte* body lotion consistently for over 6 weeks found that their skin's firmness was visibly improved. Unexpectedly, they also found that their skin looked more even-toned.

Expected Framing—Incongruent Feature

Motte is a new body lotion, made of natural ingredients including Activate Natural Shitake Complex and Vitamin B3. *Motte* is designed to improve your skin's firmness and help you sleep better. Consumers who used the *Motte* body lotion consistently for over 6 weeks found that their skin's firmness was visibly improved and they also found that using the lotion helped them sleep better.

Unexpected Framing—Incongruent Feature

Motte is a new body lotion, made of natural ingredients including Activate Natural Shitake Complex and Vitamin B3. *Motte* is designed to improve your skin's firmness. Consumers who used the *Motte* body lotion consistently for over 6 weeks found that their skin's firmness was visibly improved. Unexpectedly, they also found that using the lotion helped them sleep better.

PRODUCT DESCRIPTION (STUDY 6)

Unexpected Framing

Perfect Choice, an advanced collagen supplement, is packed with 6 grams of collagen and 18 amino acids per serving. Collagen is a protein that provides structural support, strength and elasticity to your skin. As a result, it increases skin firmness and texture, giving you a youthful appearance through skin rejuvenation. While Perfect Choice collagen has many benefits, some users have reported experiencing an itchy skin. Unexpectedly, some users have also reported experiencing a lingering aftertaste in their mouth.

Expected Framing

Perfect Choice, an advanced collagen supplement, is packed with 6 grams of collagen and 18 amino acids per serving. Collagen is a protein that provides structural support, strength and elasticity to your skin. As a result, it increases skin firmness and texture, giving you a youthful appearance through skin rejuvenation. While Perfect Choice collagen has many benefits, some users have reported experiencing an itchy skin and a lingering aftertaste in their mouth.

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