When Learning Negative Brand Associations Leads to Positive Evaluations of Effectiveness

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Research on associative learning suggests that marketers can enhance consumer attitudes by repeatedly pairing their brands with pleasant or "positively-valenced" stimuli (e.g., attractive models, babies, cute animals) rather than unpleasant or "negatively-valenced" stimuli (e.g., garbage cans and disgusting insects)—an evaluative conditioning effect also known as affect transfer. In this research, we combine the associative learning and the goal pursuit literatures to show that the influence of affect transfer on brands depends on the mindset that is active at the time of judgment. Four experiments and one field study uniquely demonstrate that negatively-valenced brand pairings may become desirable when consumers have an instrumentality mindset, which increases attention to the instrumentality, or effectiveness, of a given consumption behavior. This pattern of results occurs due to a bidirectional association between unpleasantness and instrumentality, making a brand with negative associations seem more effective. Results are robust across contexts (health, entertainment, news) and persist regardless of whether the (un)pleasant images are within or adjacent to the advertisement. The effect attenuates when consumers have a weaker association between unpleasantness and instrumentality, and reverses when consumers are cued to focus on favorability (vs. instrumentality). Contributions and implications for associative learning and brand management are discussed.

Keywords: associative learning, evaluative conditioning, affect transfer, goal instrumentality, processing mindsets, brand positioning

Conventional wisdom and an extensive body of research on associative learning suggest that consumers' attitudes toward brands generally tend to become more positive when brands are paired with pleasant, positively-valenced stimuli rather than unpleasant, negatively-valenced stimuli (for reviews, see De Houwer, Thomas, and Baeyens 2001; Hofmann et al. 2010). As a consequence of this evaluative conditioning effect, extant literature generally prescribes that marketers place advertisements within contexts that are positively valenced (e.g., featuring images of puppies or dream travel destinations) rather than within contexts that are negatively valenced (e.g., featuring images of garbage and dirty rats). Marketers' growing concern about brand-stimuli pairings is supported by Google Trends data that show searches for "Brand Safety" have grown 63% from June 2012 to June 2022. Google and Facebook also now include Brand Safety options on their advertising platforms as of early 2021. These options allow marketers to decide whether their advertisements appear alongside content that features

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themes such as tragedy or conflict, sensitive social issues, or profanity. Despite this concern, half of the top 20 most expensive television shows to advertise on in the 2019–2020 season were dramas, while only 5 were comedies, and the remainder were sports or reality contests (Webster 2020). Taken together, this emphasizes the importance of considering the valence of stimuli appearing in branding efforts as a significant topic. Drawing on research from the goal-pursuit literature (Custers and Aarts 2010; Dijksterhuis and Aarts 2010), the present research extends previous findings from associative learning theory by demonstrating that the pairing of a brand with negatively-valenced content can actually lead to more desirable perceptions about a brand, a finding that is at odds with standard evaluative conditioning effects.

Findings from goal pursuit literature suggest that when a goal is active (e.g., a health goal), consumers have increased preferences for behaviors that are instrumental in achieving the goal (e.g., health-relevant products; Ferguson 2008; Ferguson and Bargh 2004; Fitzsimons and Shah 2009; Labroo and Kim 2009; Veltkamp, Aarts, and Custers 2008). As a consequence, we argue for the existence of an *instrumentality mindset* to develop our theorizing. When this mindset is active, consumers evaluate available information—such as brand associations learned through evaluative conditioning—in terms of its instrumentality, or effectiveness, for meeting their needs. This notion builds upon the growing stream of research that suggests that associative learning may be influenced by whether consumers have specific information processing mindsets active during learning or judgment (Corneille et al. 2009; Cunha and Shulman 2011; Love 2005; Tsai and McGill 2011).

Given this concept of an instrumentality mindset, how might positively- or negatively-valenced brand associations be interpreted? We predict that consumers may develop enhanced preferences for a negatively conditioned brand owing to the inference that instrumentality requires unpleasantness. To illustrate, consider that when pursuing goals, consumers often engage in unpleasant activities (Custers et al. 2008; Labroo and Kim 2009; Maimaran and Fishbach 2014; Oettingen et al. 2006). Goals such as eating healthier, recovering from an illness, or obtaining a graduate degree may involve engaging in eating less indulging food, taking an ill-tasting medicine, or studying unenjoyable material. We argue that such experiences facilitate an association between goal-instrumental activities and unpleasantness. Further, given that research in associative learning shows that the associative processes between cues and outcomes can be bidirectional (Cunha and Laran 2009), we argue that consumers might make the (irrational) reverse inference: that unpleasantness implies inherent instrumentality. An "unpleasant = instrumental" association suggests that brands paired with negative images can seem more instrumental, and brands paired with positive images less so. Thus, when an instrumentality mindset is active, consumers should have an increased preference for a brand that has been associated with more negatively-valenced stimuli.

In sum, the present research explores how evaluative conditioning can be influenced by an instrumentality mindset. In five studies, we show the counterintuitive finding that brands that acquire negative associations through evaluative conditioning can become more desirable when consumer judgment involves assessing the instrumentality, or effectiveness, of the brand's offering. Conversely, based on the same line of argument, it might be plausible to hypothesize that positive associations might be detrimental to judgments of instrumentality, which would lead to the counterintuitive finding that positive associations might negatively affect the perception of a brand. The introduction of an instrumentality mindset and a bidirectional association between unpleasantness and instrumentality are novel contributions to the associative learning literature whose implications for learning, memory, and brand management we further discuss in the general discussion. We develop the conceptual relationships below.

CONCEPTUAL DEVELOPMENT

Affect Transfer: The Case for Positive Valence Transfer

Affect transfer occurs when an attitudinal or evaluative association that is linked to one stimulus transfers to another target stimulus because both the neutral stimulus and the valenced stimulus are presented together (De Houwer et al. 2001). For example, the inclusion of bears in promotional campaigns for Charmin toilet paper or Snuggle fabric softener may facilitate the transfer of bear-related positive associations that individuals have acquired over their lives (e.g., soft) to the respective brands. Following the co-occurrence of the affective stimulus (the bear) and the target stimulus (the brand), consumers often evaluate the target consistently with the original evaluations of the affective stimulus (e.g., the brand is evaluated more positively in terms of the expected softness of the product). This is an evaluative conditioning process also referred to as affect transfer (for reviews, see De Houwer et al. 2001; Gast, Gawronski, and De Houwer 2012; Hofmann et al. 2010). As a result, it has long been prescribed that marketers generally pair their brands with positively-valenced stimuli and avoid pairing brands with negatively-valenced stimuli.

Among other marketing phenomena, this associative learning process is often claimed to be the underlying mechanism that explains effects of celebrity endorsements (Miller and Allen 2012), co-branding (Cunha, Forehand, and Angle 2015), and brand extensions (van Osselaer and Alba 2003). Evaluative conditioning has been shown to influence attitudes, choice, and spending at both explicit (Hasford, Hardesty, and Kidwell 2015; Loebnitz and

Grunert 2015; Schemer et al. 2008; Stahl, Unkelbach, and Corneille 2009; Sweldens, van Osselaer, and Janiszewski 2010; Walther and Grigoriadis 2004) and implicit levels (Dempsey and Mitchell 2010; Hasford, Kidwell, and Hardesty 2018; Strick et al. 2009; Waiguny, Nelson, and Marko 2013). Affect transfer has also been shown to occur for mature brands such as Coke and Pepsi (Gibson 2008), and it can occur even if consumers are unaware of the relationship between the affectively-valenced stimuli and the target brand (Gawronski and Walther 2012; Hutter and Sweldens 2013; Hutter et al. 2012; Sweldens, Corneille, and Yzerbyt 2014). Its effect may be most robust when paired with multiple different affective stimuli rather than one stimulus (Sweldens et al. 2010) and it has been shown to spread to other stimuli that are associated with the target (Walther 2002) such as sub-brands affiliated with a parent brand (He et al. 2016).

Importantly, the process by which consumers learn associations about brands—and the influence of this information on judgment and decision-making, may be influenced by the activation of mindsets prior to the exposure of the stimuli in an associative and other judgment tasks (Corneille et al. 2009; Cunha and Shulman 2011; Love 2005; Saint Clair et al. 2019). Corneille et al. (2009) showed that preceding an evaluative conditioning task with a task that activates a (dis)similarity processing mindset influences how individuals interpret the affective stimuli relative to the target stimuli, amplifying (diminishing) the evaluative conditioning effect. Cunha and Shulman (2011) show that preceding a price-judgment task with instructions prompting a generalization (discrimination) mindset leads consumers to judge target prices as more (dis)similar to referent prices. A closely related stream of research suggests that providing participants with information or instructions that essentially neutralize or reverse the meaning of evaluative conditioning may also influence subsequent judgments (see Hutter 2022 for a review), which may depend on having sufficient cognitive resources and motivation to do so (Hutter and Sweldens 2018).

Building on this robust set of (dis)similarity-judgment processes involved in the interplay of contextual information and target stimuli (see also Mussweiler 2001a, 2001b, 2003; Suk and Lee 2010), we propose instrumentality mindset as an additional factor that may influence learning and judgment in contextually rich environments such as those that facilitate evaluative conditioning. We further discuss the potential implications for this stream of research in the general discussion. Next, we integrate theory on instrumentality.

Instrumentality: A Case for Negative Valence Transfer?

When engaging in goal pursuit, it is logical that consumers might evaluate the different means available to pursue goals in terms of their instrumentality, or usefulness, for goal achievement. Indeed, when a goal is implicitly activated (outside of conscious awareness), consumers have been shown to have stronger implicit attitudes (Ferguson 2008; Ferguson and Bargh 2004) and explicit behavioral intentions toward goal-relevant objects (Ferguson and Bargh 2004), categorize people based on their goal-instrumentality (Fitzsimons and Shah 2009), and perceive goal-instrumental objects to be physically larger (Veltkamp et al. 2008). Given these findings, we argue that there are situations in which consumers may adopt a mindset that focuses on the instrumentality or usefulness of a given stimulus such as a product or service, which we label as an *instrumentality mindset*.

Critical to the present research is the finding that pursuing goals often entails engaging in unpleasant activities (Custers et al. 2008; Oettingen et al. 2006). For example, Custers et al. (2008) demonstrate that when pursuing a helping goal, individuals are more likely to pick up a dirty tissue dropped by an experimenter or provide feedback in a socially awkward situation. Oettingen et al. (2006) show that when pursuing an "assertiveness" goal, individuals are more likely to engage in affectively-unpleasant combative behaviors with a task-partner. Kramer et al. (2012) find that a medicine's side effects may signal greater efficacy, but only for consumers who are motivated to process the information in greater depth (high need for cognition, high involvement). Although they do not observe it empirically, they propose a no pain no gain lay theory to explain it. Might a lay theory of side effects and efficacy extend beyond the specific case of in-depth processing of medicinal information to also impact judgments of instrumentality in other domains? How might a lay theory of side effects and efficacy manifest cognitively (i.e., in memory)?

Using the lens of associative learning theory to synthesize the above findings, we argue that given sufficient engagement in unpleasant-but-instrumental activities (e.g., taking poor-tasting medicine to improve health or studying unenjoyable material to achieve academically), consumers may learn to associate instrumentality with unpleasantness. We further argue that the association may be bidirectional, where consumers may make the reverse inference that unpleasantness is a signal of instrumentality. In support of this notion, evidence suggests that bidirectional associations may influence consumer evaluations in counterintuitive ways, such as perceiving movement toward stimuli as an indicator of its desirability (Labroo and Nielsen 2010), or perceiving effort toward a product as an indicator of its superiority (Kim and Labroo 2011) and its instrumentality (Labroo and Kim 2009). Indeed, Kim, Sweldens, and Hütter (2016) directly demonstrate that affect transfer can impact attitudes regardless of whether the valenced stimuli appear before or after the brand is presented. A recent integrative review by du Plessis, D'Hooge, and

Sweldens (2024) also explicitly includes bidirectionality in its framework.

In one relevant example of bidirectionality, Labroo and Kim (2009) counterintuitively show that the greater effort required to process disfluent (e.g., blurry) advertisements may lead to greater perceptions of product instrumentality. Given the notion of a relationship between unpleasantness and instrumentality as described above, it begs the question: what role did the *unpleasantness* of the effort play in these prior studies? Extending beyond effort, is it possible that bidirectional effects might also occur for unpleasantness in general? Further, would such effects occur even when the unpleasantness is incidental, as is the case when advertisements appear next to negative content on news, social media, television, and so on? This would provide novel implications for evaluative conditioning and branding efforts.

Based on the theorizing above, we posit that pairing a brand with negatively-valenced (i.e., unpleasant) stimuli may lead consumers to evaluate the brand as more desirable in situations where instrumentality is salient. That is, specifically when an instrumentality mindset is active, it is plausible to predict consumers may demonstrate increased preference for brands that have been paired with negatively-valenced stimuli. For example, a multivitamin that advertises next to negative news images, or a functional probiotic beverage with a slightly unpleasant aftertaste, could both be inferred to be more effective and thus be preferred over brands with more positive associations. This prediction is at odds with a large bulk of findings in the evaluative conditioning literature as discussed previously. Additionally, we uniquely contribute to the literature by demonstrating that this effect (1) is a function of unpleasantness even when effort is held constant, (2) extends beyond medicine to additional domains where instrumentality is relevant, and (3) extends beyond attributes that are integral to the brand (e.g., taste) to include contextual influences that are incidental to the brand (e.g., news images). We further highlight this research's contribution relative to the extant literature in the general discussion.

In summary, evaluative conditioning research suggests that pairing a brand with positive stimuli should engender increased preference for the brand, whereas pairing a brand with negative stimuli should lead to decreased preference for the brand. Based on our theorizing, we argue that the outcome of evaluative conditioning may depend on whether consumers have an active instrumentality mindset, or are focused on the instrumentality or effectiveness of the product. An instrumentality mindset should *increase* preference for the negatively conditioned brand owing to the association between unpleasantness and instrumentality. Moreover, another interesting potential outcome of the predicted process is that if positively-valenced stimuli signal a lack of instrumentality, it could potentially hurt the perception of a brand when an instrumentality mindset is activated. The notion of a bidirectional unpleasant-instrumental association is novel to the literature on associative learning, and an instrumentality mindset is a new moderator in evaluative conditioning literature specifically. These theoretical contributions have important implications for learning theories as well as practical implications for brand positioning. We expand on these implications in the general discussion; below, we report the five studies that test the proposed theoretical framework. A cognitive model of this framework is illustrated in figure 1, which depicts how evaluative conditioning affects brand associations with favorability (neutral mindset) or instrumentality (instrumentality mindset).

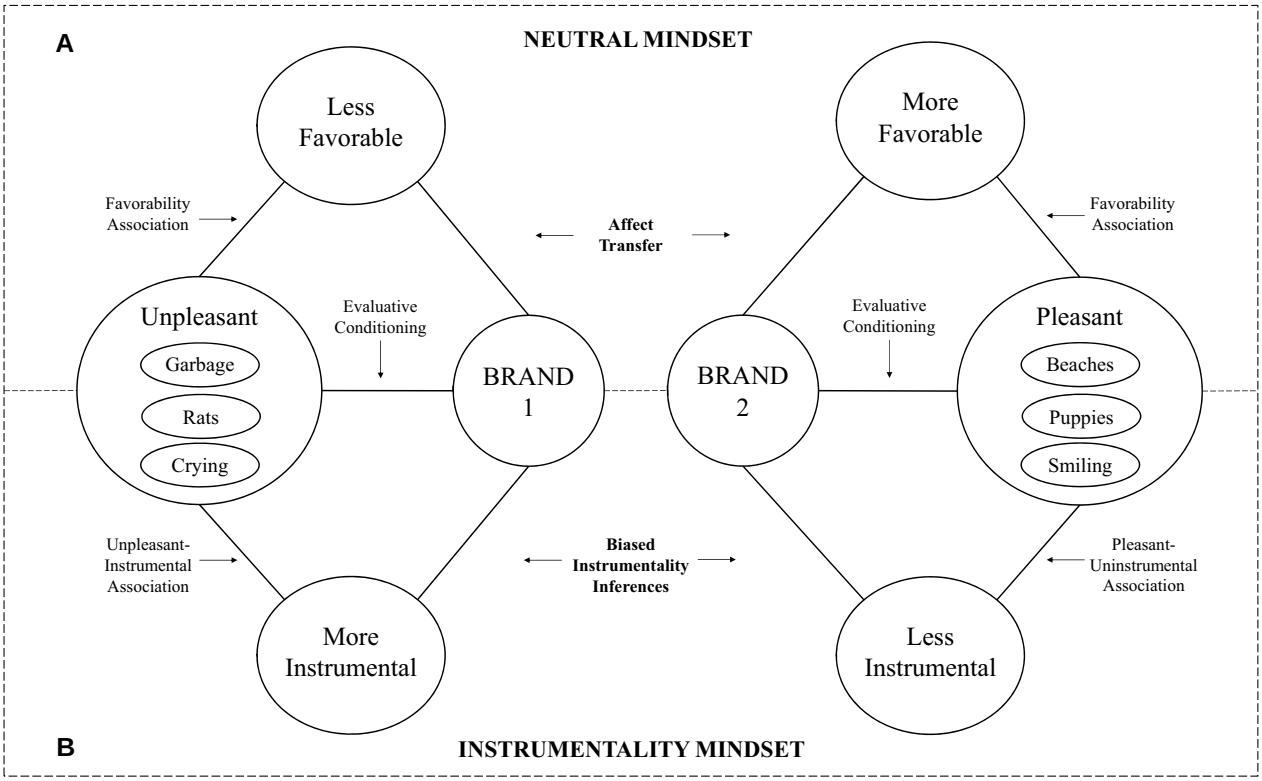
The Present Studies

We test the predictions above in four experiments and one field study. Across studies, we use evaluative conditioning procedures to pair brands with positive or negative images that are either presented as part of the context (magazine article; studies 1–3) or as part of the brand's offering (app content; studies 4 and 5). We then activate an instrumentality mindset and assess preferences by asking participants to choose between two multivitamin brands (studies 1–3), by assessing their interest in learning more about an entertainment application (study 4), or by measuring their click-through rate on Facebook advertisements for a news application (study 5).

Study 1 performs a critical theory test and finds that preference for a negatively (vs. positively) conditioned brand increases when an instrumentality mindset is activated via goal priming. Study 2 replicates this finding but uses choice framing to activate the instrumentality mindset and provides process evidence through moderation by unpleasant-instrumental association strength. Study 3 uses a between-subjects, rather than within-subjects, evaluative conditioning design and finds evidence that the effect holds for both positively- and negatively-valenced evaluative conditioning. Specifically, preference for a negatively (positively) conditioned brand increases (decreases) relative to a neutral brand when an instrumentality mindset is active. Study 4 extends this effect to a measure of interest in an entertainment application (an "app") that displays positive or negative content and uses brand positioning (advertisement copy) to activate an instrumentality mindset. Study 5 is a field study that demonstrates generalizability using a measure of click-through rate on advertisements for a fictitious news app on Facebook. Alternative theories are addressed and implications are discussed. Together, the findings support the novel theoretical proposition of an interactive effect between evaluative conditioning and an instrumentality mindset. The studies and their implications are discussed next.

FIGURE 1

COGNITIVE MODEL: EVALUATIVE CONDITIONING LEADS TO AFFECT TRANSFER UNDER A NEUTRAL MINDSET (A) OR BIASED INSTRUMENTALITY INFERENCES UNDER AN INSTRUMENTALITY MINDSET (B)



STUDY 1: NEGATIVE ADVERTISING CONTEXTS AND GOAL PRIMING

In study 1, we test our theoretical propositions by priming a health goal (vs. no goal) and observing participants' choice between two brands of multivitamins that have been paired with either positive or negative stimuli during an evaluative conditioning task. The expectation is that the activation of a health goal increases the probability of choosing the brand of multivitamin that has been paired with negatively-valenced stimuli.

The health consumption context provides implications for consumer well-being and also provides conceptual similarity that helps build on the extant foundational work exploring side effects as predictors of medicinal efficacy (Kramer et al. 2012). Unlike this prior work, we do not expect our results to depend on processing depth. Further, whereas their work manipulated an aspect of the brand's product (degree of side effects), we instead investigate our focal effect utilizing the valence of the advertisement's surrounding context as an evaluative conditioning procedure (and hold product attributes constant). This extension supports the novel contributions to evaluative conditioning research described previously.

The goal priming procedure also builds on relevant prior work (Labroo and Kim 2009). Recall that previous literature shows that goal priming may lead consumers to evaluate products in terms of goal-instrumentality (Ferguson 2008; Ferguson and Bargh 2004; Fitzsimons and Shah 2009; Labroo and Kim 2009; Veltkamp et al. 2008). This implies that goal priming itself activates an instrumentality mindset. Thus, we expect the association between instrumentality and unpleasantness to bias evaluations of instrumentality, and subsequently preference, when a goal is primed (vs. not primed).

Method

Seventy-five undergraduates participated in the study in exchange for course credit. The study was broken up into three phases ostensibly presented as separate and unrelated tasks: evaluative conditioning, goal priming, and product evaluation. The study design was a 2 (evaluative conditioning: positive vs. negative) × 2 (goal priming: no goal vs.

health goal) mixed design where evaluative conditioning is a within-subjects factor and goal priming is a between-subjects factor with random assignment.

The evaluative conditioning task was a "simulated magazine experience" in which participants saw eight simulated magazine pages with instructions to simply pay attention to the content as they would be questioned later about what they saw. Each simulated magazine page contained three elements: a large affectively positive or negative image that was ostensibly related to the article on the page, an illegible article taken from a real image of a magazine page, and a small advertisement in which one of two brand names appeared. Participants were randomly assigned to see either 4 pages of "T Brand" paired with positive headline images (puppies, a wedding, a beach, mickey mouse) and 4 pages of "V Brand" paired with negative headline images (garbage, rats, prisoners, a car wreck) or vice versa. The letters T and V were chosen for their phonetic similarity, close proximity to one another in the alphabet, and distance from letters that might imply quality or any sort of ranking (e.g., A, B, C). The simulated magazine pages were shown for 5 seconds each, and the advertisements for the brands made no reference to a specific product—they merely referenced the brand itself with copy that read "T Brand Products" or "V Brand Products" and "find us at your local grocer." The affective images were taken from the International Affective Picture System (IAPS) database (Lang, Bradley, and Cuthbert 1999) and were matched for valence and arousal within each type of valence (negative images 1280, 9291, 9419, 9902; positive images 1720, 1999, 4626, 5825). The stimuli are presented in appendix A.

The goal priming procedure was presented as a "Scrambled Sentence Task" (Bargh et al. 2001; Srull and Wyer 1979). Participants unscrambled eight sentences containing either health-related words (e.g., health, vitamins, exercise, athletic) or neutral words (e.g., window, chair, table, shirt). Each of the eight sentences was shown three times and participants were instructed to focus on speed and accuracy when unscrambling. Given that persistence at a goal after a delay is indicative of goal priming rather than semantic priming (Sela and Shiv 2009), we created a delay between the goal priming task and the product evaluation task by asking participants to read an unrelated article for one minute. The article was presented as part of a pre-test and participants were asked to rate their interest in the article.

In the third phase of the experiment, product evaluation, participants saw an image of a T Brand Multi-Vitamin and an image of a V Brand Multi-Vitamin (presentation order randomized) as part of a "Shopping Scenario" and were asked which brand they would choose to purchase if they were considering trying a new multivitamin. The images of the two bottles of multivitamins were identical except for the letters T and V, which represented the brand (appendix A). Participants then completed demographics measures and funneled debriefing.

Results

The dependent variable was coded such that choice of the brand paired with negative images (the focal target brand) was coded as 1 and choice of the brand paired with positive images was coded 0. A logistic regression was conducted with health goal priming as the independent variable and choice of the negatively conditioned vitamin as the dependent variable. Results revealed a significant increase in probability of choosing the negatively conditioned brand from health goal priming ($\hat{\pi}_{no\_goal} = 22.38\%$, $\hat{\pi}_{goal}$ 44.24%; $\beta = 1.03$, SE $= 0.521$; $\chi^2(1) = 3.93$, $p = .047$). Whether T Brand or V Brand was the negatively conditioned brand did not impact the results ($p = .217$) or interact with goal priming ($p = .58$). Results are depicted in figure 2.

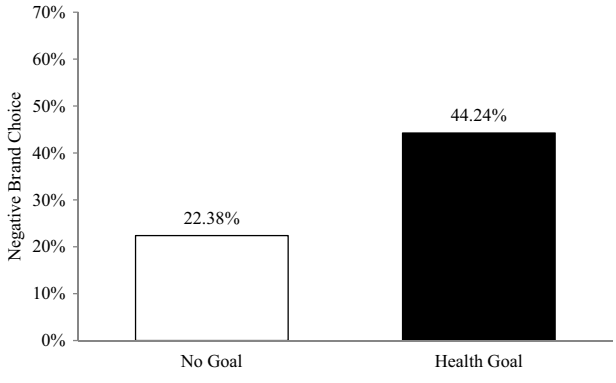
Discussion

In study 1, we performed a critical theory test to determine whether activating an instrumentality mindset might enhance preference for a negatively associated product relative to a positively associated product. Results supported this hypothesized relationship. Participants primed with a health goal (and thus focusing on instrumentality) were more than twice as likely as nonprimed participants to choose a brand that was previously seen alongside negative images, a result that is at odds with the standard affect transfer effect.

Study 1 uses health goal priming and shows that this goal activation leads to increased choice of a relatively "unpleasant" brand. However, it does not investigate the underlying mechanism of whether participants were focusing on instrumentality. This leaves the results open to a

FIGURE 2

S1: GOAL PRIMING INCREASES PREFERENCE FOR NEGATIVE BRAND



number of alternative theoretical explanations (e.g., an incidental effect of goal priming, but not an effect of processing information in terms of its instrumentality). To provide further support for our proposed process in study 2, we utilize explicit instructions to activate an instrumentality mindset and we explore the underlying mechanism. Specifically, we indirectly measure the bidirectional association strength and test whether it moderates the relationship between the instrumentality mindset and preference for negatively conditioned stimuli. These changes are discussed below.

STUDY 2: THE UNPLEASANT = INSTRUMENTAL ASSOCIATION AND "EFFECTIVE" CHOICES

Rather than priming a health goal (vs. no goal) as in study 1, study 2 instead asks participants to choose which multivitamin is more effective or more favorable, depending on condition. We expect that choices based on the effectiveness (vs. favorability) of a product should increase preference for a negatively-valenced brand given that a negatively-valenced association implies greater effectiveness. This effect should be amplified as bidirectional association strength increases (and diminished as strength decreases). Directly asking participants to choose on effectiveness provides process evidence that they indeed perceive the brand to be more effective. This, along with the moderation effect, should provide evidence of our proposed process and help address questions about alternative explanations. We expect the favorable condition to perform similar to the neutral condition in study 1, where we assumed people were evaluating on the pleasantness of the brands.

Method

One hundred and twenty-four undergraduates took part in the study in exchange for course credit. The design is 2 (evaluative conditioning: negative vs. positive) × 2 evaluation type (favorability vs. effectiveness) × bidirectional association strength mixed design where evaluative conditioning is manipulated within-subjects, evaluation type is manipulated between-subjects with random assignment, and bidirectional association strength is a measured variable. The study was conducted in three phases: evaluative conditioning, product evaluation, and bidirectional association measure. The evaluative conditioning phase was identical to that of study 1 (positive vs. negative).

To manipulate instrumentality mindset, the product evaluation phase was identical to that of study 1 except for changes to the instructions: "Below are two competing products. Please choose the one that you think would be MOST FAVORABLE [EFFECTIVE]" depending on the evaluation-type condition. The participants asked to choose effectiveness were expected to exhibit an active instrumentality mindset.

The third phase assessed participants' bidirectional association strength. The bidirectional association stems from the idea that goal pursuit frequently involves engaging in unpleasant activities. The single-item measure added to the end of the study asked participants' agreement with the statement, "Activities that are the most useful for achieving goals are sometimes the most unenjoyable" on a 101-point sliding scale anchored by 0—strongly disagree and 100—strongly agree. Agreement should be positively related to bidirectional association strength, making this an indirect measure of association strength. Participants then responded to demographics and funneled debriefing items.

Results

Choice of the negative (vs. positive) multivitamin was entered into a logistic regression with evaluation type, bidirectional association strength, and the interaction between the two as independent variables. Results showed a marginally significant main effect of evaluation type ($\beta = -2.35$, SE = 1.33; $\chi^2(1) = 3.12$, $p = .077$) and a significant main effect of association strength ($\beta = -0.03$, SE = 0.015; $\chi^2(1) = 5.27$, $p = .022$; $M = 62.6$, SD = 23.44), qualified by the predicted significant interaction term ($\beta = .06$, SE = 0.021; $\chi^2(1) = 7.13$, $p = .008$). The replicate factor was non-significant ($p = .89$) and did not impact the interaction ($p = .25$).

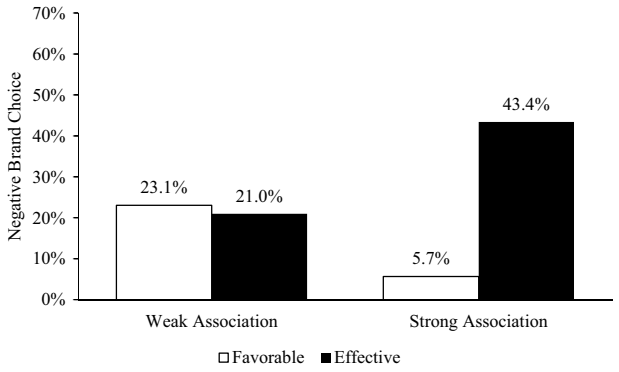
Decomposing the interaction, a Johnson–Neyman analysis shows that choosing on effectiveness (vs. favorability) statistically significantly increases the likelihood of choosing the negative brand only for values of association strength above 59.02 ($\beta_{J-M} = 1.01$, SE = 0.513; $\chi^2(1) = 3.84$, $p = .05$), with statistically nonsignificant effects for lower values of association strength. Although the effect of evaluation type trends in the opposite direction as association strength decreases, it fails to reach statistical significance even at the lowest observed value of association strength ($\beta_{J-M} = -1.97$, SE = 1.2; $\chi^2(1) = 2.69$, $p = .101$). This provides converging process evidence of the impact of an instrumentality mindset and the bidirectional unpleasant-instrumental association on evaluative conditioning. Results are depicted in figure 3, with association strength shown at one standard deviation above and below the mean.

Discussion

The primary purpose of study 2 is to provide further support for the proposed process and thereby decrease confidence in alternative explanations. Study 1 followed the argument that, during goal pursuit, consumers evaluate stimuli in terms of their instrumentality for achieving the goal. Because unpleasant stimuli seem more instrumental (i.e., bidirectional unpleasant-instrumental association),

FIGURE 3

S2: EVALUATING ON EFFECTIVENESS INCREASES NEGATIVE BRAND PREFERENCE, AMPLIFIED BY ASSOCIATION STRENGTH



consumers are more likely to choose the more negative brand when evaluating on instrumentality. Study 2 steps away from using goal priming to activate an instrumentality mindset and instead directly asks participants to choose between the product that seems most effective (i.e., instrumental) or the one that seems most favorable.

If negative brands are seen as being more instrumental, then evaluating effectiveness (vs. favorability) should increase the likelihood of choosing the negative brand. This effect should be amplified (diminished) as bidirectional association strength increases (decreases). Results significantly supported these proposed relationships. This provides converging evidence for the idea that when consumers adopt an instrumentality mindset, negative brands become more attractive—especially when consumers have a stronger unpleasant-instrumental association.

Although studies 1 and 2 provide evidence that an active instrumentality mindset can increase preference for negatively-valenced stimuli, an important result from a theory testing standpoint, the average responses observed in these experiments do not seem to show negative brands becoming desirable per se—only less undesirable. That is, although an instrumentality mindset may increase preference for a negatively conditioned brand, overall, people seem to still prefer the "pleasant" brand over the "unpleasant" brand more than half the time.

One possible explanation for not observing a stronger relative preference for the negatively conditioned brand may stem from the evaluative conditioning procedure used in studies 1 and 2. Seeing both positive and negative brands in such a short amount of time may prompt participants to compare the two on favorability prior to activating the instrumentality mindset. This might have weakened the effect of any subsequent information processing mindset activation. This notion is similar to the findings of Noh et al. (2014), which suggest that stimuli presentation may inherently activate one processing mindset that subsequently inhibits the activation of a different mindset. To account for this potential shortcoming, study 3 utilizes a *between-subjects* design for the evaluative conditioning procedure. Our expectation is that the preference for a relatively negatively-valenced brand following activation of an instrumentality mindset will become more prominent than in the previous studies, leading to greater choice of the "unpleasant" brand over the "pleasant" brand.

STUDY 3: BETWEEN-SUBJECTS EVALUATIVE CONDITIONING

In addition to potentially amplifying the "effectiveness" choice framing, utilizing a between-subjects design for the evaluative conditioning procedure in study 3 allows us to tease apart the separate effects of positively-valenced and negatively-valenced conditioning. Not only can we explore whether a "negative" brand becomes more desirable as compared to an unconditioned "neutral" brand that has not been previously seen, but we can also test whether a "positive" brand actually becomes *less* desirable compared to a neutral brand. This helps to address concerns about effects specific to the stimuli used for negative conditioning since participants in the positive-valence condition never see negative images. Further, preference for an unfamiliar, neutral brand over a positive brand would be a particularly novel contribution to the literature on evaluative conditioning.

Method

One hundred and thirty-one participants from the United States were recruited from Amazon MTurk in exchange for compensation (for MTurk discussions, see Buhrmester, Kwang, and Gosling 2011; Paolacci and Chandler 2014). Similar to study 2, the study 3 design is 2 (evaluative conditioning: negative vs. positive) × 2 (evaluation type: favorability vs. effectiveness). Different from study 2, evaluative conditioning and evaluation type are both manipulated between-subjects using random assignment. Study 3 was conducted in two phases: evaluative conditioning and product evaluation.

In the evaluative conditioning phase, rather than seeing *both* brands as in the prior studies, participants were randomly assigned to be exposed to *only one brand* (either T Brand or V Brand, counter-balanced as a replicate factor). In the positive-valence condition, the target brand was paired with positive images; in the negative-valence condition, the target brand was paired with negative images. Thus, participants only saw one brand in this phase.

Following the evaluative conditioning phase of the experiment, participants proceeded to the product evaluation phase of the experiment, where they were asked to

choose which brand they believed to be the most favorable or effective, depending on evaluation-type condition—as in study 2. However, recall that participants only *saw one brand* in the experiment's first phase. Thus, a key difference from the prior studies is that participants choose between a conditioned brand (the focal, target brand) and an unconditioned brand they have never seen before. In the positive-valence condition, participants chose between the positively conditioned target brand and an unconditioned brand to which they have not been previously exposed. In the negative-valence condition, they chose between the negatively conditioned target brand and the unconditioned brand.

Results

Choice of the target (conditioned) brand's multivitamin was entered into a logistic regression with evaluative conditioning, evaluation type, and the interaction between the two as independent variables. Results showed a marginally significant main effect of evaluative conditioning ($\beta = 1.01$, SE $= 0.526$; $\chi^2(1) = 3.7$, $p = .055$), and a significant main effect of evaluation type ($\beta = 1.57$, SE $= 0.552$; $\chi^2(1) = 8.07$, $p = .004$), qualified by the predicted significant interaction term ($\beta = -3.66$, SE $= 0.811$; $\chi^2(1) = 20.34$, $p < .0001$). The replicate factor was nonsignificant ($p = .73$) and did not significantly impact the primary interaction ($p = .63$).

Simple effect analyses reveal that, in the positive-valence condition, participants evaluating the multivitamin brands on favorability showed stronger preference for the positively conditioned (vs. unconditioned) brand ($\hat{\pi} = 68.1\%$) than did participants evaluating the brand on effectiveness ($\hat{\pi} = 21\%$, $\beta = -1.97$, SE $= 0.581$; $\chi^2(1) = 11.52$, $p = .001$). In the negative-valence condition, the reverse pattern emerged: participants evaluating on favorability ($\hat{\pi} = 43.9\%$) showed weaker preference for the negatively conditioned (vs. unconditioned) brand than did participants evaluating the brand on effectiveness ($\hat{\pi} = 78.9\%$, $\beta = 1.69$, SE $= 0.574$; $\chi^2(1) = 8.66$, $p = .003$).

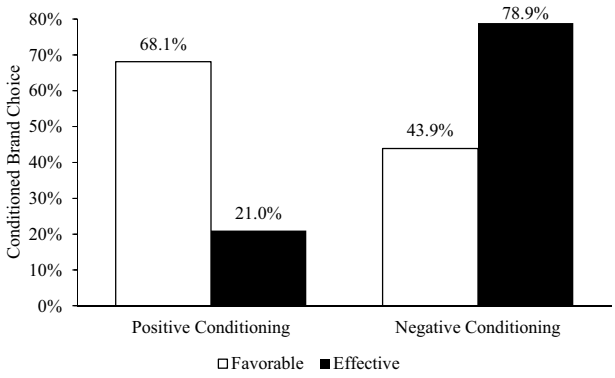
When evaluating on favorability, the negative (vs. positive) evaluative conditioning marginally significantly reduced choice of the conditioned (vs. unconditioned) brand ($\hat{\pi}_{pos} = 68.1\%$, $\hat{\pi}_{neg}$ 43.9%, $\beta = -1.03$, SE $= 0.535$; $\chi^2(1) = 3.69$, $p = .055$), and negative (vs. positive) conditioning significantly increased choice of the conditioned (vs. unconditioned) brand under effectiveness ($\hat{\pi}_{pos} = 21\%$, $\hat{\pi}_{neg} = 78.9\%$, $\beta = 2.63$, SE $= 0.608$; $\chi^2(1) = 18.74$, $p < .001$). Results are depicted in figure 4.

Discussion

Whereas studies 1 and 2 establish the effect, test boundary conditions, and provide process evidence, those studies may not have yielded sufficiently strong preferences for the negatively conditioned brand over the positively conditioned brand. That is, even though preferences for the negatively conditioned brand shifted upward, positive conditioning still seemed to be the best route for brand managers. Study 3 utilizes a between-subjects design that addresses a limitation of the evaluative conditioning procedure from studies 1 and 2 that may have masked stronger effects.

FIGURE 4

S3: EVALUATING ON EFFECTIVENESS INCREASES (DECREASES) PREFERENCE FOR NEGATIVE (POSITIVE) BRAND VERSUS AN UNCONDITIONED BRAND



Using this alternative between-subjects design, study 3 results provide significant evidence supporting the claim that an instrumentality mindset may facilitate consumers' choice of a negatively conditioned brand. When participants were asked to choose on effectiveness, they chose a negatively conditioned over an unconditioned brand 78.8% of the time. In the positive-valence condition, participants chose the positively conditioned brand over the unconditioned brand only 21.2% of the time. The latter effect is particularly difficult to explain based on prior research—an unconditioned, unfamiliar brand was actually preferred over a positively conditioned brand when choosing on effectiveness. This provides evidence that not only might unpleasantness signal instrumentality, but that pleasantness might signal a lack of instrumentality.

Studies 1–3 still retain some limitations. First, the domain of health is an important one for consumer welfare, but it is not clear whether the observed effects may extend beyond this domain. Second, although the evaluative conditioning procedure in study 3 was between-subjects, the same simulated magazine context was used across all three studies. Study 4 addresses these limitations by utilizing a novel set of stimuli, a different evaluative conditioning procedure, and a different product category. These changes and others are described below.

STUDY 4: POSITIONING NEGATIVE ATTRIBUTES OF AN ENTERTAINMENT APP

Study 4 has key changes relative to the previous experiments with the goal of strengthening the intended research contribution. First, the evaluative conditioning procedure uses a different set of images to demonstrate robustness outside of the stimuli used in studies 1–3. Second, the evaluative conditioning procedure presented the images as part of the advertisement (i.e., part of the brand's attributes) rather than part of the surrounding advertisement context, extending the generalizability of our findings. Third, the instrumentality mindset was activated via brand positioning rather than choice framing (studies 2 and 3) or goal priming (study 1), providing further implications for branding efforts. Fourth, the context was changed from the health domain (multivitamins) to the entertainment domain (entertainment app), helping to test whether our proposed effects might extend to situations where the consumer's primary focus is on leisure or pleasure-seeking.

Additionally, although effort was not manipulated in any prior studies and would be particularly difficult to utilize as an alternative explanation for the between-subjects design in study 3, we have not yet measured whether the evaluative conditioning procedure impacts perceived effort. Study 4 addresses this limitation by including a measure of effort adapted from prior research as a way to rule out the impact of effort on the observed differences in instrumentality (i.e., the effort mechanism already documented by Labroo and Kim 2009). This should provide greater confidence that our results are a novel effect of the (un)pleasant valence of the stimuli used in the evaluative conditioning phase of the study.

Method

Three hundred and fifteen participants from the United States were recruited from Amazon MTurk in exchange for compensation. The design was 2 (evaluative conditioning: negative vs. positive) × 2 (brand positioning: user-friendly vs. effective). Similar to study 3, both factors are manipulated between subjects. Study 4 was conducted in two phases: evaluative conditioning and product evaluation.

The evaluative conditioning task was a "marketing campaign preview" where participants saw instructions stating that they would see advertisements the researchers were testing on the next few pages, and their task was to pay attention as they would be asked questions about what they saw. Participants then saw 4 advertisements across 4 pages (each advertisement was presented on its own page). All advertisements contained 3 elements: a large positively- or negatively-valenced image (depending on condition), a logo for a fictitious brand that either said X Brand or Z Brand (randomly assigned), and a quote from a fictitious blog that served as the brand positioning manipulation (described next). Both the positive and negative conditions retained one image used in the previous studies, with the remaining images being taken from the IAPS database and again matched on valence and arousal so as to provide a different set of stimuli (appendix B).

For the brand positioning manipulation, the advertisements all included a quote from a fictitious tech blog that varied by condition: "The most USER-FRIENDLY [EFFECTIVE] Entertainment App." The quote that was intended to activate an instrumentality mindset, similar to studies 2 and 3 that asked participants to choose based on effectiveness. The quote was positioned on the right side of the ad, and below the quote was the brand's logo. To be clear, each participant only saw one brand with the same quote across four ads, where each advertisement used a different image. The brand positioning quote and the valence of the images varied between-subjects depending on condition. A separate test ($n = 200$) verified that this manipulation shifted perceptions of the brand on a 201-point sliding scale ($-100 =$ effective, $100 =$ user-friendly): $M_{\text{effective}} = -2.16$, SE = 5.64 vs. $M_{\text{user-friendly}} = 21.59$, SE = 5.87; $t(198) = 2.92$, $p = .004$; $d = 0.41$.

In the product evaluation phase, participants responded to a single item that asked, "How interested are you in learning more about the app you saw?" on a 101-point scale anchored by 0—not interested at all and 100—extremely interested. On the following page, participants responded to a two-item measure of difficulty adapted from prior research (Kim and Labroo 2011; Labroo and Kim 2009; Tsai and McGill 2011): "How easy [effortful] was the Marketing Campaign Task where you viewed the advertisements?" on a 7-point scale anchored by 1—not easy [effortful] at all and 7—very easy [effortful]. Participants then responded to demographics and debriefing items. The expectation is that when the brand is paired with positive images, participants who see it positioned as user-friendly will be more interested in the app than will participants who see the app positioned as effective. Conversely, when the brand is paired with negative images, interest should be higher for the effective positioning than the user-friendly positioning. We expect no effect of evaluative conditioning on effort.

Results

Interest in learning more about the app was entered into an ANOVA with the evaluative conditioning and brand positioning factors, as well as the interaction between these two factors as independent variables. Results showed a significant main effect of evaluative conditioning ($F(1, 311) = 7.54$, $p = .006$; $\eta_p^2 = 0.024$), a nonsignificant main effect of effective (vs. user-friendly) brand positioning ($p = .745$), and the predicted significant interaction between the two ($F(1, 311) = 9.10$, $p = .003$; $\eta_p^2 = 0.028$).

In the positive-valence condition, participants who saw the advertisements paired with positive images reported statistically significantly greater interest in learning more about the app when it was positioned as user friendly ($M = 70.52$, SE = 3.06) than when it was positioned as effective ($M = 59.46$, SE = 3.53; $F(1, 311) = 5.61$, $p = .019$; $\eta_p^2 = 0.18$). In contrast, when the advertisements showed negative images (negative-valence condition), the reverse was true: participants reported marginally significantly greater interest when the app was positioned as effective ($M = 60.35$, SE = 3.16) than when it was positioned as user-friendly ($M = 51.45$, SE = 3.46; $F(1, 311) = 3.61$, $p = .058$; $\eta_p^2 = 0.11$[1]). Whereas the difference between positive and negative conditions was significant when positioned on user-friendliness ($M = 70.52$ vs. 51.45, $F(1,311) = 17.07$, $p = .00005$; $\eta_p^2 = 0.52$), this difference was not statistically significant when positioned on effectiveness ($p = .850$).

Finally, we tested whether the evaluative conditioning procedure was simply a manipulation of effort. An ANOVA with the two-item effort measure ($M = 5.32$, SD = 1.11) showed no effect of evaluative conditioning ($F(1, 313) = 0.000004$, $p = .998$). Results are depicted in figure 5 and discussed below.

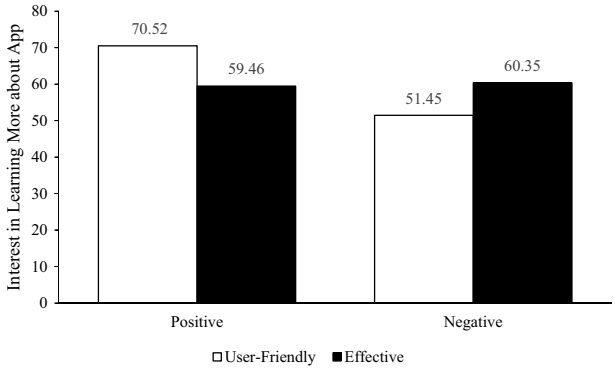
Discussion

Study 4 sought to extend the generalizability of studies 1–3 and address alternative explanations. Specifically, study 4 showed that positioning a brand's entertainment app with positive advertisements as effective actually reduced participants' interest in learning more about it as compared to positive advertisements that positioned the brand's app as user-friendly. This is an interesting finding in that it implies that brands positioning themselves on instrumentality, efficacy, or effectiveness may actually be doing themselves a disservice if they follow the common wisdom of pairing their brands with positively-valenced stimuli. Conversely, when the entertainment app was displayed with negative images in the ads, positioning the app as effective provided a marginally significant ($p = .058$) boost to participants' interest when compared to a user-friendly positioning. This is similar to the pattern observed in prior studies and again is consistent with our proposition that negative valence becomes more desirable under an instrumentality mindset. We discuss the pattern of results of study 4 further in the general discussion.

Studies 1–4 have supported our key proposition that negative valence may become a more desirable association (and positive valence less desirable), but only when consumers have adopted an instrumentality mindset and are thereby focusing on the potential instrumentality or effectiveness of the given consumption behavior. These studies have shown process evidence and robustness across product categories and both incidental and integral evaluative conditioning. However, none of these studies has measured consequential consumer behavior. Building on study 4, study 5 uses a field study conducted with an actual Facebook advertisement campaign for a fictitious news app.

FIGURE 5

S4: POSITIONING ON EFFECTIVENESS INCREASES (DECREASES) INTEREST FOR NEGATIVE (POSITIVE) BRAND



STUDY 5: REAL FACEBOOK ADVERTISEMENTS FOR A NEWS APP

Study 5 makes several changes that break away from the procedures utilized in the previous studies. First, it uses a different set of positive and negative images taken from the IAPS database (appendix C). This helps to rule out the possibility that the observed effects are specific to the stimuli used in the previous studies. Second, rather than using vitamins or an entertainment app, study 5 changes the product to a news app. Third, rather than a controlled laboratory setting at a large university (studies 1 and 2) or paid online participants (studies 3 and 4), study 5 is a field study conducted with advertisements in a Facebook advertisement campaign. Fourth, to adapt the evaluative conditioning procedure, study 5 utilizes a "carousel" advertisement which shows multiple images in a clickable slide-show format. Study 5 again positions the brand as either user-friendly or effective to cue an instrumentality mindset. The expectation is that when the brand is positioned as effective, consumers will be more likely to respond to the advertisement that pairs the brand with negative images than the advertisement that pairs positive images, with the pattern reversing under user-friendly positioning. All changes are described in further detail below.

1 Eight outliers reported interest outside of 2 standard deviations from the mean. Filtering these cases shows a significant difference in the negative valence condition ($M = 63.33$ vs. 51.45, $F(1,303) = 4.07$, $p = .045$; $\eta_p^2 = 0.13$).

Method

The Facebook advertisement campaign garnered 42,863 total impressions on the Facebook platform from English-speaking consumers in the United States over the age of 18. The design was 2 (evaluative conditioning: negative vs. positive) × 2 (brand positioning: user-friendly vs. effective), between-subjects design, thus creating four advertisements. The number of clicks each advertisement receives is the primary dependent variable. Facebook has algorithms that maximize for advertisement relevance, engagement, clicks, etc., which may lead to endogeneity issues. Although it is unclear how Facebook algorithms might systematically impact the results in a 2 × 2 between-subjects design, it may introduce unwanted noise in the data. To alleviate potential selection biases stemming from endogeneity, we selected a campaign goal of "reach." A reach goal only optimizes for the highest possible reach while maintaining cost efficiency, thus decreasing the likelihood that an advertisement is served to those who are most likely to respond to it. We also set the number of exposures to the advertisement to one per user.

A Facebook business page for a fictitious app called "Newsie" was created as the account from which the advertisements would be launched. When exposed to the online ad, respondents see the brand name, "Newsie," below which are either three negative images or three positive images displayed side by side horizontally in the advertisement carousel. Below each image is the advertisement copy "Most. User-Friendly. [Effective.] News App." depending on brand positioning condition. Below the copy is a call to action "Click to learn more!" as well as a "Learn More" button. Should respondents click the button or visit the app's page, a single post informs them that the app is in beta testing and to come back soon. Advertisement stimuli are shown in appendix C. Similar to study 4, a separate test ($n = 200$) verified that this manipulation shifted perceptions of the brand (201-point sliding scale: −100 = effective, 100 = user-friendly; $M_{\text{effective}} = -2.40$, SE = 6.32 vs. $M_{\text{user-friendly}} = 31.42$, SE = 5.14; $t(198) = 4.14$, $p < .0001$; $d = 0.59$).

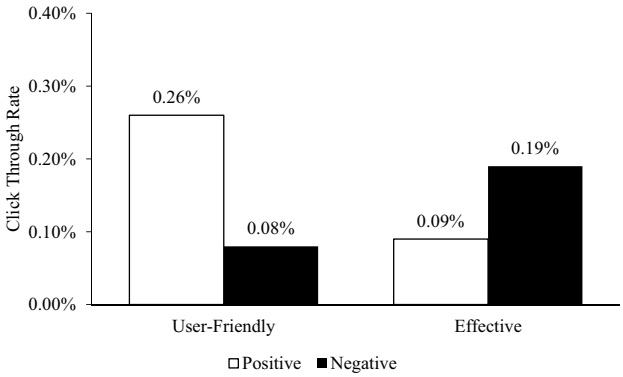
Results

Whether respondents clicked on the advertisement was entered into a logistic regression with evaluative conditioning, brand positioning, and the interaction between the two as independent variables. Results showed a significant main effect of negative (vs. positive) evaluative conditioning ($\beta = -1.14$, SE = 0.39; $\chi^2(1) = 8.67$, $p = .003$), a significant main effect of effective (vs. user-friendly) positioning ($\beta = -1.12$, SE = 0.39; $\chi^2(1) = 8.33$, $p = .004$), and the predicted significant interaction between the two ($\beta = 1.96$, SE = 0.55; $\chi^2(1) = 12.53$, $p = .0004$).

Decomposing the interaction, logistic regression reveals that when the brand was paired with positive images, respondents were significantly more likely to click on the advertisement that positioned the brand as user-friendly ($\hat{\pi} = 0.26\%$) than the advertisement that positioned the brand as effective ($\hat{\pi} = 0.09\%$, $\beta = -1.12$, SE = 0.39; $\chi^2(1) = 8.33$, $p = .004$). When the brand was paired with negative images, this pattern reversed. Respondents were significantly more likely to click on the advertisement that positioned the brand as effective ($\hat{\pi} = 0.19\%$) than user-friendly ($\hat{\pi} = 0.08\%$, $\beta = -0.84$, SE = 0.4; $\chi^2(1) = 4.54$, $p = .033$). The positive pairing received significantly more clicks than the negative pairing when positioned on user-friendliness ($\hat{\pi} = 0.26\%$ vs. 0.08%, $\beta = 1.14$, SE = 0.39; $\chi^2(1) = 9.99$, $p = .003$), and the negative pairing received significantly more clicks than the positive pairing when positioned on effectiveness ($\hat{\pi} = 0.19\%$ vs. 0.09%, $\beta = 0.82$, SE = 0.4; $\chi^2(1) = 4.29$, $p = .039$). Finally, comparing the positive/user-friendly ad's performance to the negative/effective ad's performance, the two did not statistically significantly differ ($\chi^2(1) = 1.05$, $p = .31$). In short, results support the proposed predictions, where pairing the brand with negative images leads to about twice as many clicks as a pairing the brand with positive images when respondents are evaluating on effectiveness (i.e., instrumentality). Results are displayed in figure 6.

FIGURE 6

S5: POSITIONING ON EFFECTIVENESS INCREASES (DECREASES) ADVERTISEMENT CLICKS FOR NEGATIVE (POSITIVE) BRAND



Discussion

Study 5 enhances generalizability by using a field study that assesses actual behavioral responses to digital advertisements on the Facebook advertisement platform, and also by shifting the product to a new domain (a news app) and using a different set of images. Results support the proposed theoretical model, where a brand paired with negatively-valenced stimuli actually becomes desirable when consumers are cued by the brand positioning to evaluate the brand on effectiveness. When cued to evaluate on

user-friendliness, results follow the pattern expected by extant evaluative conditioning literature, where the brand paired with positive images is more desirable. Taken together, the results support the contention that, when an instrumentality mindset is active, a bidirectional association between instrumentality and unpleasantness can bias consumption behavior toward brands with negatively-valenced associations (and away from brands with positively-valenced associations). We discuss further implications of these findings below.

GENERAL DISCUSSION

Counter to marketers' intuition and prior literature, this research demonstrates that more negatively-valenced brand associations may actually become desirable when consumers have an active instrumentality mindset wherein their attention is focused on how instrumental, effective, or useful a consumption behavior is. Interestingly, our findings also suggest that a positively-valenced brand may become *less* desirable when evaluating on instrumentality. We argue that this effect stems from a bidirectional association between unpleasantness and instrumentality, and show evidence that this effect is weakened for consumers with a weaker bidirectional association.

In our studies, we show that the same product may be more or less preferred depending on the activation of an instrumentality mindset, which we accomplished via goal priming (study 1), a judgment task (studies 2 and 3), or by a product's positioning (studies 4 and 5). We used different evaluative conditioning procedures that paired brands with positive or negative images both via the surrounding external context of the advertisement (e.g., advertising next to negative news or media content) and via the images within the advertisement itself (e.g., advertisements for a dramatic television show or news stories). We also demonstrated the effect both in a health context (multivitamins) and media contexts (entertainment app, news app), which suggests our proposed model may persist even in contexts that are more on focused pleasure-seeking (e.g., entertainment).

In considering boundary conditions, it is interesting to note the pattern of results found in study 3 (multivitamins) in comparison to that of study 4 (entertainment app) since both utilized between-subjects evaluative conditioning designs across two different product contexts. Specifically, in study 3 (vitamins) the overall means for the negative-valence condition were higher than those in the positive valence condition, implying that negativity got an overall boost in this study. In study 4 (entertainment), however, the negative-valence condition means were lower than those of the positive valence condition, implying a boost for positivity in this study.

While it is possible that the difference in magnitude of effects across studies is an effect idiosyncratic to the new negative images used in study 4, it is also possible that this could be an effect of the change to the product category. For entertainment, pleasure-seeking may be more common than in health consumption situations such as taking vitamins. Indeed, one could speculate that the pattern of results between the studies is consistent with the notion that "unpleasant = instrumental" is more prominent in health and less so in entertainment, suggesting a potential boundary condition. The pattern of results within the "effective" brand conditions of studies 3 and 4 is also consistent with this possibility: the positive/effective pairing did indeed reduce preferences in the health context, but not in the entertainment context.

That being said, this is only one of several possible explanations for the different results between studies 3 and 4 (images being displayed external to the advertisement context in study 3 vs. images displayed within the advertisement itself in study 4 is another). Regardless, it remains true that the focal statistical analyses supported the key relationships we predicted. The notion that a bidirectional unpleasant-instrumental association is more or less prominent in one or another product category is ultimately just describing product category as an antecedent of bidirectional association strength, a factor that we already uniquely demonstrated as a boundary condition in study 2. However, exploring such boundaries may be useful for future research that extends this theoretical model into additional consumption contexts.

Given the observed variance specifically with negative valence, it is also important to keep in mind that the account we put forward demonstrates and explains the finding that a *positively* conditioned brand may become significantly less desirable when participants are cued to evaluate on instrumentality. From a theory-application standpoint, this implies that marketers would be wise to consider the implication that "pleasant = ineffective" when crafting brand strategy across different product categories. Additionally, given the prominence of negatively-valenced content across traditional and new media, positioning the brand when promoting in these contexts remains an important consideration.

We hope our findings open the door for further research that explores the nuanced inferences that arise from both the positive and negative sides of evaluative conditioning. Surely there are additional boundary conditions that are beyond the scope of a single article, such as the diagnosticity of the valence (Labroo and Kim 2009), or individual differences that may impact the strength of the unpleasant-instrumental association such as protestant work ethic (Cheng, Mukhopadhyay, and Schrift 2017). However, the primary focus of the present research lies in introducing an extended theoretical model of instrumentality inferences into research on evaluative conditioning, thereby identifying conditions where the classic affect transfer effect is reversed. This includes the two moderators—instrumentality mindset and unpleasant-instrumental association strength—as well as their interaction. Indeed, although one may suggest various alternative explanations across

studies, the explanation we put forward parsimoniously accounts for the many experimental conditions across all five studies. We discuss additional implications for theory and practice below.

Implications for Theory

Instrumentality. Several aspects of the present research make unique contributions to related literature streams. First, as we mentioned earlier, we extend the foundational work on instrumentality by Labroo and Kim (2009) and Kramer et al. (2012) in several ways. Whereas this prior work focused on how perceived instrumentality is impacted by the effect of effort arising from advertisement disfluency (Labroo and Kim 2009), or the effect of medicinal side effects (Kramer et al. 2012), we examine whether simply placing an advertisement in a context with positive or negative images might be enough for consumers to make a biased inference as to the brand's instrumentality. Our effects were, therefore, not reliant on a specific negative attribute internal to the brand itself (a side effect, a blurry ad[2]).

Additionally, while effortful information processing was a necessary component in both of these prior investigations, the present research held effort constant and found no impact of evaluative conditioning on effort. In fact, it may be the case that (un)pleasantness played an underlying role in these prior studies since it was not teased apart. It is unclear whether effort without unpleasantness would produce the same result (e.g., seeing tasks as "Fun" instead of "Work"; Laran and Janiszewski 2011; Woolley and Fishbach 2016), which may make for interesting future research. It is also intriguing to consider what a "pleasant" side effect might do to perceptions of instrumentality (the "keto clarity" effect of improved cognitive functioning while on a keto-friendly weight loss diet comes to mind). Thus, documenting the interplay of unpleasantness and instrumentality in this article uniquely opens up additional possibilities for exploring effects of other antecedents of (un)pleasant brand associations and efficacy.

Learning. As described earlier, this work arguably makes its strongest contribution to associative learning research more broadly, and to evaluative conditioning research in particular. Specifically, the notion of an instrumentality mindset and a bidirectional association between unpleasantness and instrumentality are novel to research on evaluative conditioning, and together form the basis for the reversal of classic affect transfer effects that we observe. Our findings demonstrate that a given brand association (e.g., pleasantness) may be *reinterpreted* with regard to its relevance to an active processing mindset, and thereby influence judgment. This highlights the importance of information processing mindset in judgment processes and adds to literature suggesting that attitudes and evaluations may be constructed at the time of judgment (Koriat and Sorka 2015; Reed, Wooten, and Bolton 2002; Saint Clair et al. 2019; Schwarz 2007; Shulman et al. 2015; Simonson 2008; White, Pothos, and Busemeyer 2014).

The mindset-driven reinterpretation of evaluative conditioning has implications for research on the conscious controllability of evaluative conditioning effects as discussed in single- and dual-process models of cognition (Hutter 2022; Hutter and Sweldens 2018; Sweldens, Tuk, and Hutter 2017; van Osselaer and Janiszewski 2001). Prior findings suggest that encouraging participants to essentially ignore or reverse the meaning implied by evaluative conditioning may indeed reduce or reverse the effect on some judgment tasks (for a review, see Hutter 2022). Although studies 2 and 3 in the present research contained explicit instructions asking participants to judge based on effectiveness, studies 1, 4, and 5 did not contain such explicit judgment instructions, and none of the studies asked participants to ignore or reverse the evaluative conditioning effects. Modulation of evaluative conditioning effects was nonetheless still observed across studies. This may suggest that mindsets activated by cues in the context might influence associative learning spontaneously (and relatively automatically), without the need for deliberative volitional control (explicit countervailing instructions as in prior research).

It is also interesting to speculate on implications for single- and dual-process theories for several reasons. Foremost is that both theories seem to agree that (1) both simple (e.g., associative) and complex (e.g., propositional) cognitive relationships exist and (2) these can manifest in different ways across tasks (e.g., timed matching tasks vs. self-report measures) (Hutter 2022). It may be tempting to conflate simplicity with automaticity, but the present results support the possibility that both simple and complex cognitions can manifest across tasks in relatively automatic circumstances. Automaticity may therefore not always require simplicity (although automating complex cognitions may require more repetition) (Heycke and Gawronski 2020). Research on single- and dual-process models of cognition may therefore need to reconsider the role that automaticity and controllability play when seeking evidence for the two models. Further, exploring the role of mindsets and bi-directional associations may also help inform research on the boundaries of learning processes. Models of cognitive consistency may also help identify situations in which a previously learned association may change its meaning (Gawronski et al. 2014, 2015).[3]

2 Labroo and Kim (2009) also used blurry advertisements and goal activation in all studies. While goal activation may activate an instrumentality mindset, alternative explanations are difficult to rule out, including construal level (Tsai and McGill 2011).

3 Readers interested in controllability may wish to explore research on impulse control, self-control, self-regulation, or goal pursuit (Iyer et al. 2020). In much of this research, the concept of automatic impulses and volitional control as two interacting processes is well established.

Mindset-driven (re)interpretation of learned attributes also has implications for categorical learning. If consumers are sorting brands, products, services, and so on into different categories, the same attribute information may lead consumers to categorize the same product differently depending on the mindset. For instance, exposure to a piece of information with high intrinsic value, such as how dangerous a product is, may prompt a danger-oriented information processing mindset that influences how consumers categorize subsequent products they learn about (e.g., a "danger" mindset; Noh et al. 2014). However, if prompted to select which product is the "coolest," a somewhat dangerous product may actually become more desirable owing to the association between being cool and risk taking (Warren and Campbell 2014).

Additionally, cultural differences may lead to chronically salient information processing mindsets that influence categorization. For instance, some cultures may be predisposed to categorizing products based on how much individual prestige they afford, while others may be more focused on how much communal harmony they might bring (Love 2005). Further exploration of effects of individual, cultural, and contextually-dependent differences in mindset activation on information processing may indeed prove a fruitful area for future research.

Additional research is also needed to document pervasive mindsets that might influence learning and evaluation beyond the instrumentality mindset. Bellezza and Berger (2020) utilize an interesting learning procedure to associate products with high, middle, or low status. They find that low-status products may become more desirable if they facilitate social distinction, suggesting that status information may be reinterpreted depending on mindset. Tsai and McGill's (2011) finding that effort increases choice confidence under high construal is another relevant example that suggests that the same level of effort might be interpreted differently based on a mindset shift.

Implications for Practice

The question of "when are negative associations desirable" has interesting implications for practice. The present research suggests that it is critical to understand the types of mindsets that the context may trigger for consumers; when effectiveness is a key driver of consumption, unpleasantness may be helpful to the brand. Whereas marketers may hesitate to present their products in conjunction with images of garbage, it may be prudent to garner more innocuous non-positive associations with their products. For example, a health supplement may benefit from product reviews where customers mention that the supplement has some negative aspects (e.g., less desirable flavor), but is very effective. Moreover, if marketers are aware of a high likelihood that their campaigns will appear in negatively-valenced contexts (e.g., negative news or social media content, dramatic TV shows or movies), they may do well to focus their brand positioning on functionality, efficacy, or instrumentality.

A cautionary tale should be noted here: it may be tempting to simply make the advertising content positive enough to overcome the negativity of the surrounding context. However, when CNN broke news of Russia's invasion of Ukraine in 2022, an overly enthusiastic Applebee's commercial was aired alongside the breaking news. This faux pas quickly went viral, and CNN subsequently stopped running those kinds of side-by-side ads. However, such advertising placements still persist across various mediums, and popular but negatively-valenced contexts still abound (e.g., TV dramas). Marketers may be better served by adjusting their branding to focus on instrumentality and ride the proverbial wave, rather than fighting the current of the surrounding context.

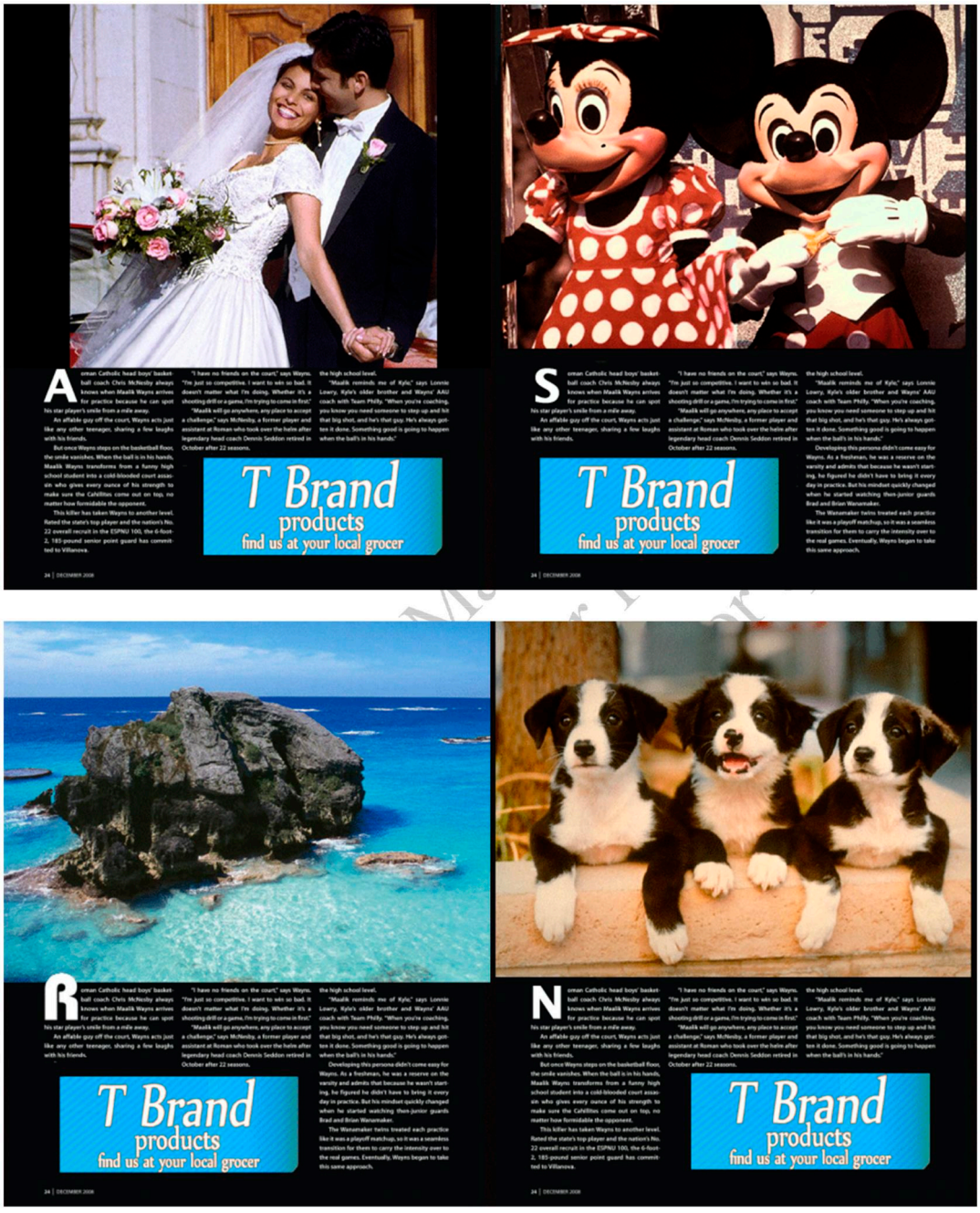
Extending the above point, it may be useful to consider the opposite of our core proposition: when are positive associations *un*desirable? The findings reported herein suggest that marketers may want to associate their brand with imagery that is less positively valenced when they are explicating the instrumentality of their offering. To illustrate, consider Febreze air freshener ads that focus on its effectiveness. Rather than relying solely on advertising executions that associate the brand with positive valence via images of people smiling or flowers in meadows, Febreze has instead executed campaigns that show dead fish, old garbage, and dirty pets. These executions are utilized to highlight how effective Febreze is in eliminating odors. Thus, in translating the findings reported herein into practical executions, marketers may benefit from the inclusion of less positive stimuli in their brand activations when positioning on instrumentality for relevant consumption goals.

DATA COLLECTION STATEMENT

Both authors supervised collection of data for the first study by research assistants at the University of Washington in the spring of 2011. The first author supervised collection of data by research assistants at the University of Washington for study 2 in the spring of 2013. The first author coordinated data collection for study 3 from Amazon MTurk in the fall of 2017 and for study 4 from Amazon MTurk in the summer of 2022. The first author managed collection of data from Facebook for study 5 in the spring of 2017. All data were analyzed by the first author and discussed by both authors. The second author provided input and consultation on all data collection and analysis. The data for all studies are stored on the Open Science Framework as well as on a password-protected Google Drive folder that is backed up on an encrypted external hard drive.

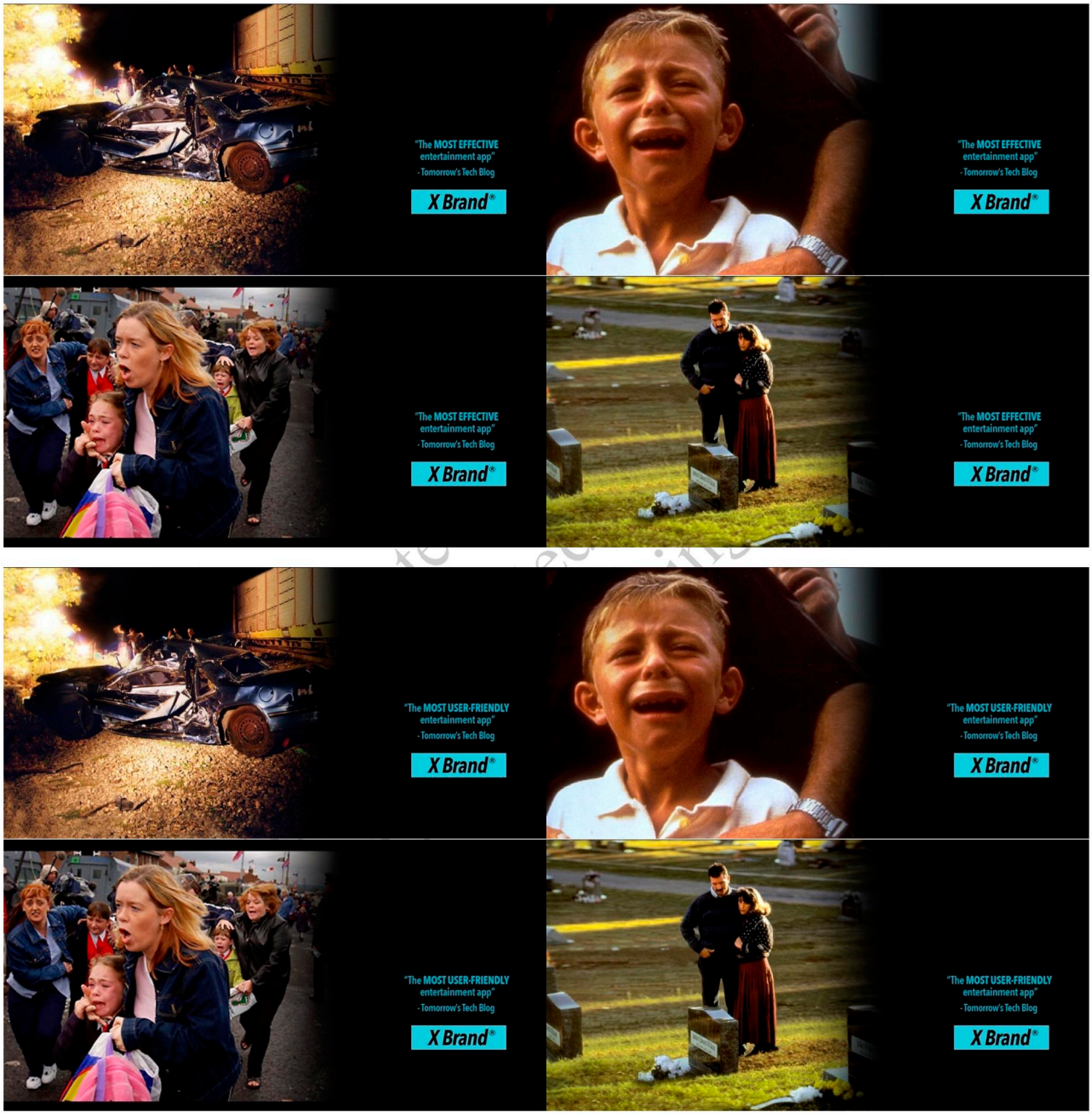
APPENDIX A

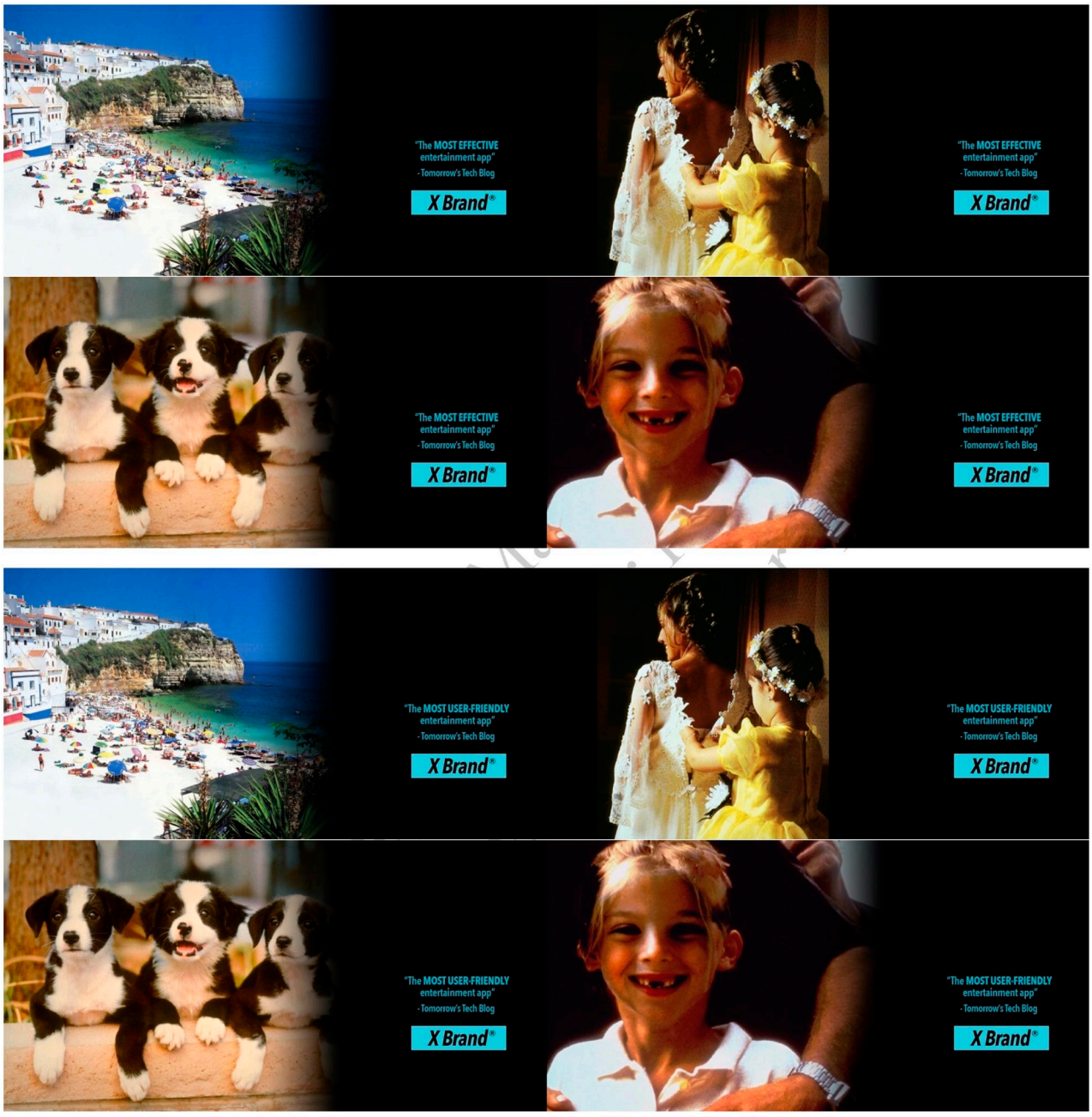
NEGATIVE AND POSITIVE EVALUATIVE CONDITIONING STIMULI (STUDIES 1–3) AND CHOICE TASK STIMULI (STUDIES 1–3)



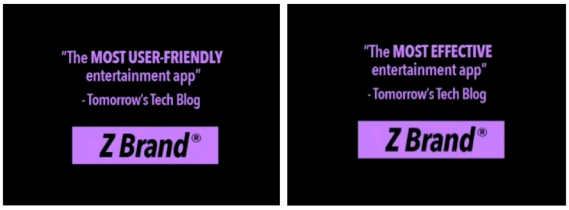
APPENDIX B

STUDY 4 STIMULI SCREEN SHOTS



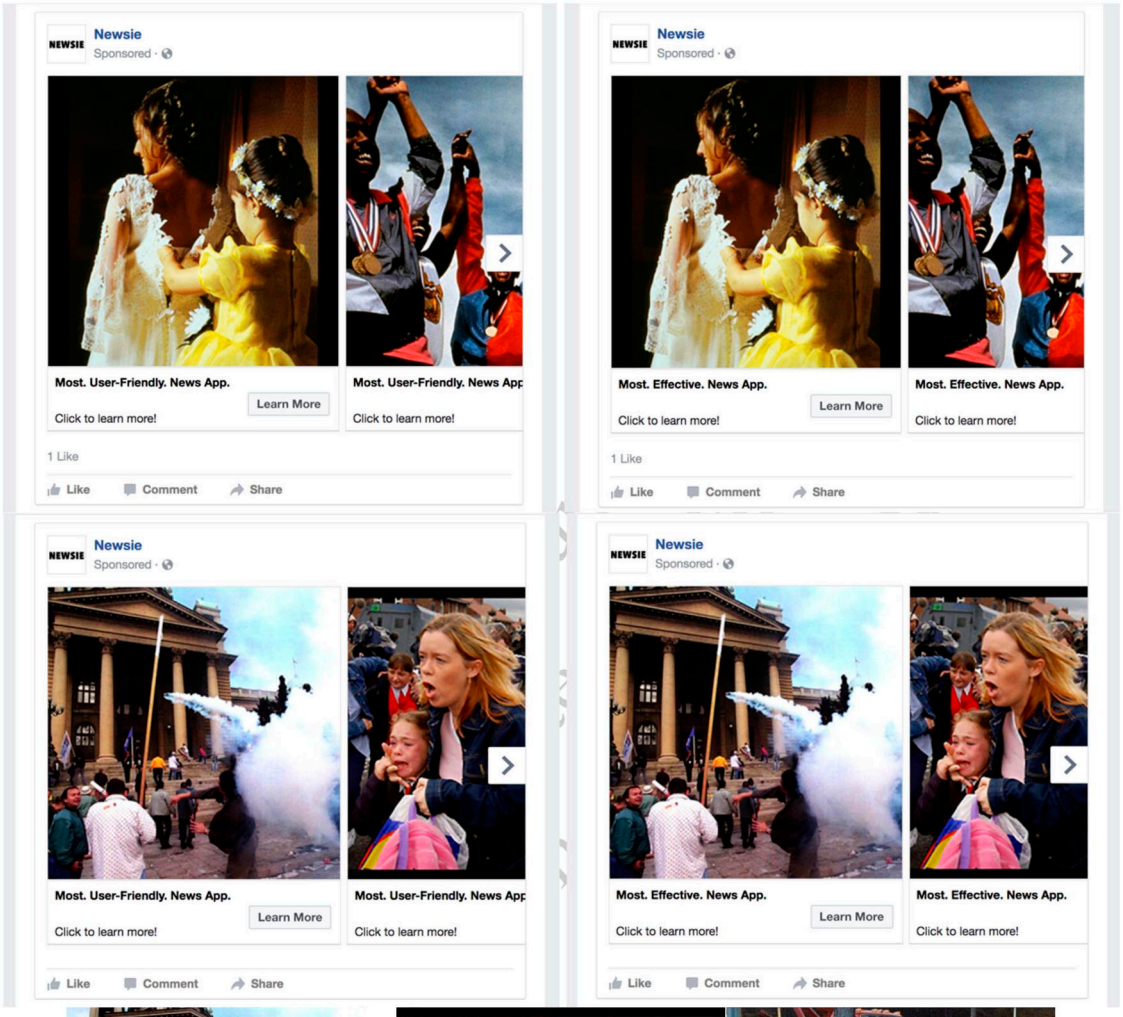


REPLICATE STIMULI



APPENDIX C

STUDY 5 STIMULI SCREEN SHOTS AND FULL IMAGE SETS



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