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ADVERTISING

From creation to dissemination

Cátia Sofia Carvalheiro Alves

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with the co-supervision of Dr. Pedro Almeida and Dr. Patricio Costa.

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Abstract

Advertising - From creation to dissemination

This dissertation is an investigation of different factors that affect advertising performance. Chapter 1 introduces the importance of studying advertising effectiveness by exploring its production and dissemination. Chapter 2 examines how brand attitudes of advertising creatives (hereinafter "creatives") change the type of executional elements they choose to include in their advertisements. Chapter 3 extends Chapter 2 by exploring how advertising creatives' brand attitudes alter their ability to forecast the extent to which consumers will like their work. Chapter 4 focuses on the impact of discrete contextual emotions on the memorability of subsequent advertisements. Chapter 5 summarizes the findings of each chapter and highlights theoretical and practical contributions.

Keywords: consumer behavior, advertising, emotions

To those whose soul will remain.

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Chapter 1

Introduction

My dissertation investigates two crucial phases of advertising: creation and dissemination. Namely, it explores the creative process of advertising production and its outcomes, as well as the context in which the advertisement is placed.

In the so-called "Golden Age of Advertising" - between 1960 and 1980 - consumers were actively interested in advertising, and professional advertising creatives were considered talented and brilliant (such as the famous David Ogilvy or James Walter Thompson; Independent 2008). However, the advertising industry changed significantly over time; we now have many more advertisements and new forms of transmitting them, including influencer marketing and digital marketing. This evolution was accompanied by a decrease in consumers' genuine interest in advertising; indeed, more than 80% of consumers skip TV ads, and the clickthrough rate of online advertising is below 1.5% (Cho and Cheon 2004; Plunkett 2010; Statista 2020).

Marketers and advertising creatives aim to reverse this pattern and seek ways to enhance advertising effectiveness and regain consumers' attention. This dissertation provides several insights in that regard: how to optimize the type of advertisement produced, how to accurately predict consumers' responses, and how to increase advertising recall. I start by investigating how to improve advertising success during its creation at advertising agencies (Chapters 2 and 3). I then study how to improve advertising success during media exposure (Chapter 4).

In Chapter 2 I look at how individual characteristics of ad creatives change the type of advertisements they produce. In particular, how ad creatives' brand attitudes

influence the executional elements (emotional or functional) used when creating advertisements. I document that both professional creatives and non-professional participants are more likely to include functional elements in their ad and less likely to include emotional elements when they have negative (vs. positive) attitudes toward the brand. I propose that this occurs because creatives who dislike a brand try to stay rational and suppress their emotions to correct a perceived bias. Consistent with this proposed mechanism, I observe that creatives with negative brand attitudes have a lay intuition that their attitude might impact their work negatively and believe they should suppress their emotions and stay rational to produce a good ad.

Chapter 3 extends the previous chapter by focusing on the same individual characteristics of ad creatives—brand attitudes. Specifically, I investigate how ad creatives' brand attitudes influence their ability to predict consumers' responses. I observe that creatives with positive brand attitudes are susceptible to inaccuracy in their forecasting; specifically, they tend to overestimate the extent to which consumers will like their work. On the contrary, creatives with negative brand attitudes accurately predict consumers' responses to their advertisements for that brand. I propose that negative brand attitudes lead to accurate predictions because ad creatives experience conflicting thoughts concerning their performance. On the one hand—just as creatives with positive brand attitudes—they are motivated to predict that other people will like their work; on the other hand, they believe their negative brand attitudes impacted their work negatively. These inconsistent thoughts lead to more effortful and rational thinking processes, making their predictions more accurate.

Chapter 4 departs from the previous chapters because it targets advertising performance during its dissemination phase rather than its creation phase. In this chapter

I investigate how discrete contextual emotions affect advertising memorability. I propose that disgusting content produces a carry-over effect. Namely, disgusting content persists in consumers' minds even after the emotional content disappears, which hampers the encoding of a subsequent commercial, reducing its memorability. I demonstrate that commercials' recall diminishes when they follow disgusting content (vs. happy/sad/fear-inducing content). Last, Chapter 5 summarizes the empirical results presented in the previous chapters and discusses broad theoretical and managerial implications of my findings.

Declaration of Contribution

The research presented in Chapter 2 is being conducted with Dr. Irene Consiglio and Dr. Luis Martinez, Chapter 3 with Dr. Irene Consiglio, and Chapter 4 with Professor Ale Smidts and Dr. Maarten Boksem.

Chapter 1. I wrote this chapter and implemented the feedback of Dr. Irene Consiglio and Dr. Luis Martinez.

Chapter 2. I formulated the research question and the design of the studies with Dr. Irene Consiglio. I performed the literature review, the data collection and analysis, and wrote the manuscript. Dr. Irene Consiglio provided feedback on all these steps, and Dr. Luis Martinez provided feedback on the manuscript writing.

Chapter 3. I formulated the research question, performed the literature review, the design of the studies, the data collection and analysis, and wrote the manuscript. Dr. Irene Consiglio provided feedback on all these steps, and my supervisor provided feedback on the manuscript writing.

Chapter 4. I formulated the research question, performed the literature review, the design of the studies, the data collection and analysis, and wrote the manuscript. Professor Ale Smidts provided feedback on the design of the studies and the manuscript writing, and Dr. Maarten Boksem provided feedback on the design of the studies and data analysis.

Chapter 5. I wrote this chapter and implemented the feedback of Dr. Irene Consiglio and Dr. Luis Martinez.

Chapter 2

Creatives' Brand Attitudes Affect the Type of Ads They Produce

Consumers and professional creatives often produce creative work for brands, such as new product designs or TV commercials (e.g., Doritos "Crash the Super Bowl" commercials; Chang and Taylor 2016). Previous research has identified several factors that influence the production of marketing materials: creative managers' leadership style (Mallia, Windels, and Broyles 2013), the level of cooperation between client and agency (Calderwood, Koslow, and Sasser 2021), and agencies' strategy (Koslow, Sasser, and Riordan 2006), among others. Surprisingly, however, research has overlooked the impact of creatives' brand attitudes on the outcome of their work. If anything, research in related fields suggested that disliking a brand may be detrimental (Amabile 1985; de Jesus et al. 2013; Sasser and Koslow 2012).

In contrast, we propose that negative brand attitudes are not necessarily detrimental to creatives' work. We show that creatives' brand attitudes affect the type of executional elements included in their advertisements: functional or emotional. Notably, both types of appeals can be beneficial (functional and emotional), depending on a brand's objectives. For instance, emotional ads are preferable when the brand's purpose is to increase positive word of mouth (Akpinar and Berger 2017), and functional ads are preferable when the brand's purpose is to advertise products in new markets (Chandy et al. 2001).

Specifically, we hypothesize that negative (vs. positive) brand attitudes increase the likelihood of including functional elements in an advertisement and decrease the likelihood of including emotional elements. We theorize that this occurs because

creatives who dislike a brand perceive that they have a bias to overcome; this, in turn, induces them to stay rational and suppress emotions during their creative task. From a theoretical standpoint, this research contributes to the advertising literature by offering the first demonstration of how creatives' brand attitudes affect the type of executional elements that they feature in advertisements. We also contribute to the literature on creativity by proposing novel psychological processes involved in projects that creatives dislike.

THEORETICAL BACKGROUND

Brands have a significant impact on consumers' perceptions and behavior (Aaker 1997; Fennis and Pruyn 2007; Fournier 1998). Besides driving consumers' preferences for products and services as well as promoting loyalty (Amine 1998; Hoyer and Brown 1990), brands create emotional bonds with consumers, eliciting a range of positive (Batra, Ahuvia, and Bagozzi 2012; Maxian and Toulouse 2013) and negative emotions (Romani, Grappi, and Dalli 2012). Moreover, brands allow consumers to express their individual and social identity (Kleine, Kleine, and Kernan 1993), they imbue the consumer's self with a wealth of symbolic meaning, and they are a self-expression tool, able to extend and even change people's self-perceptions (Aaker 1999; Park and John 2010).

The influence of brands can surpass a marketing context. For instance, brands play a role in interpersonal relationships: different brand preferences between romantic partners affect the couple's life satisfaction (Brick et al. 2018). Given the significant role of brands in people's lives, it is surprising that the influence of brand attitudes on the process of advertising creation has been unexplored previously. Advertising creators

are consumers themselves — what distinguishes them from other consumers is that brands are also the object of their work.

A few qualitative studies have explored the influence of creatives' individual characteristics and preferences on their work. It was suggested that creatives' work reflect their personality (Blythe 2007) and that creatives' personal preferences guide their choice of visual elements for marketing materials (Blythe 2007; Phillips, McQuarrie, and Griffin 2014). This qualitative evidence also suggests that creative professionals who "feel close" to a brand empathize with the potential target user and understand this user's needs (Kover 1995). More relevant to the current research, negative brand attitudes could be detrimental to ad performance because they may induce lower levels of intrinsic motivation (Amabile 1985; de Jesus et al. 2013; Sasser and Koslow 2012). Consistent with this prior evidence, exploratory qualitative data from 35 semi-structured interviews with creative managers from 26 advertising agencies revealed that managers often allocate creatives to projects based on creatives' product and brand preferences, among other criteria.

In this research we challenge the idea that negative brand attitudes are necessarily detrimental to advertising. Instead, we argue that brand attitudes affect the type of executional elements that creatives tend to include in an ad: functional or emotional. Specifically, we propose that working for disliked (vs. liked) brands increases the likelihood of including functional elements in an ad and decreases the likelihood of including emotional elements.

Based on previous research in advertising (Aaker and Norris 1982; Holbrook and Batra 1987; Zarantonello, Jedidi, and Schmitt 2013), we define functional elements as rational or factual arguments that show product superiority: for example, the

objective composition of product attributes, tangible benefits of the product, or demonstrable advantages compared to competitors. We define emotional elements as those that generate emotions and sensations: for example, vivid sensory elements (e.g., music, color, smell) that trigger consumers' senses or fantastic scenarios that stimulate consumers' imagination.

Importantly, functional and emotional elements are used for different purposes and in different situations. Thus, both types of elements can be beneficial if they are appropriate. For instance, ads containing mostly emotional elements are useful to generate word of mouth (Akpinar and Berger 2017) or to increase online searches (Guitart and Stremersch 2021), whereas ads containing mostly functional elements are preferable for products in new markets (Chandy et al. 2001). Consequently, depending on their communication objectives, brands might benefit more from work made by creatives who dislike those brands.

HYPOTHESES DEVELOPMENT

This research investigates how creatives' attitudes toward a brand affect the type of executional elements included in an advertisement for that brand. Specifically, we propose that creatives with negative attitudes toward a brand are more likely to include functional elements and less likely to include emotional elements in an ad for that brand. When creatives produce an ad for a brand they dislike, there is an incongruence between what the task requires and their brand attitude—they have to write something positive about a brand that they dislike. In this situation, they perceive that their brand attitude might affect their work negatively; therefore, they try to find ways to overcome this perceived bias. Indeed, prior research suggests that individuals often perceive their

own bias (Bollich, Rogers, and Vazire 2015; Herzog, Hattula, and Dahl 2021), and when they do, they engage in behaviors to overcome it (Perry, Murphy, and Dovidio 2015). We propose that creatives with negative brand attitudes approach their task (writing an ad) in a level-headed way by adopting a rational mindset and suppressing their emotions. This bias-correction strategy impacts their work such that they are more likely to include elements that appeal to rationality and less likely to include elements that induce emotions in their commercial, as compared to creatives with positive brand attitudes.

In contrast, when creatives produce an ad for a brand they like, this task requires them to communicate a message consistent with their attitude—they have to write something positive for a brand that they like. Thus, they do not perceive any bias to overcome and consequently no need to engage in any particular regulation strategy in approaching their task. This implies that creatives with positive brand attitudes should be as likely to include functional and emotional elements in their advertisements as any other creative who does not perceive a bias (for instance, as compared to creatives who have neutral brand attitudes). We further unpack these predictions below.

Strategies to Correct Perceived Bias

We propose that creatives with negative brand attitudes perceive that they have a bias to overcome and that they try to do so by being more rational and less emotional. We predict that creatives employ this strategy for a number of intertwined reasons. First, by definition, biases and heuristics are deviations from rationality (Kahneman, Slovic, and Tversky 1982). Laypeople perceive this as detrimental and seek to reduce biases when they are aware of them (Devine et al. 2012; Maxfield et al. 2020; Stewart

and Payne 2008). Thus, an initial, intuitive, straightforward strategy to compensate for lack of rationality is the attempt to stay rational. There is limited but suggestive research in support of this belief: for instance, bias awareness leads to more systematic information processing (Davis 2015), which is consistent with rational thought and behavior.

Second, people have the intuition that emotions might impede rational, correct behavior. Indeed, even though emotions can be beneficial and do not necessarily impair decision-making, they are often conceptualized as interfering with rationality and as something that produces inferior outcomes (Pham 2006; VanBergen, Lurie, and Chen 2021). Relying on feelings has been described as something instinctual that people need to overcome to make better decisions (Loewenstein 1996). In fact, in common usage, being emotional is often equated to being irrational (Clore 2011). Thus, in an attempt to stay rational, creatives endeavor to inhibit emotional expression (i.e., they suppress emotions; Aldao, Nolen-Hoeksema, and Schweizer 2010; Gross 1998).

Corroborating the theorizing above, prior research shows that sometimes individuals employ suppression mechanisms to impede perceived biases (Herzog, Hattula, and Dahl 2021). Moreover, emotion suppression is often used for instrumental reasons (English et al. 2017; Tamir, Chiu, and Gross 2007). For example, when employees are angry with their boss, they usually need to suppress their anger (Sansone et al. 1992) in order to work with him or her. Hence, it is plausible to hypothesize that creatives who dislike a brand will try to suppress their emotions during the creative task. This attempt, in turn, might inadvertently turn off the expression of emotions in their creative output.

In conclusion, we hypothesize that two related processes—staying rational and suppressing emotions—spill over to the choice of executional elements used by creatives with negative brand attitudes. Consequently, their advertisement shifts to more functional content (rational arguments and utilitarian benefits) and less emotional content (elements that elicit emotions and sensations), compared to ads produced by creatives with positive brand attitudes.

People with positive attitudes are unlikely to think that they have a bias to overcome to produce good work—there is no strong reason for them to believe that their positive attitudes would impact their work negatively since conventional wisdom suggests otherwise. Therefore, they should not engage in a bias-correction strategy, and we expect them to produce similar ads—with the same levels of functional and emotional elements—as would any other person who does not perceive to hold a bias (e.g., people with neutral attitudes toward the brand). In sum, we expect the effect of brand attitudes on the type of executional elements chosen for the ad to be driven by the attempt to overcome a perceived bias among people with negative brand attitudes.

Overview

We tested our predictions in four studies, in laboratory and real-life contexts. Study 1 and Study 2 present evidence that negative (vs. positive) brand attitudes increase the likelihood of including functional elements and decrease the likelihood of including emotional elements for a TV commercial; of note, this effect occurs among professional creatives in advertising agencies as well as among non-professional participants. Study 3 shows that—consistent with the proposed mechanism—individuals believe that their negative brand attitudes might impact their work negatively and that

they should stay rational and suppress emotions to produce a good work. Study 4 provides evidence consistent with our proposed mechanism—the attempt to overcome a perceived bias among creatives who dislike the brand—and inconsistent with an alternative mechanism in which the effect results from the mere presence of more positive emotions among people with positive (vs. negative) brand attitudes. We preregistered all studies except Study 2.

STUDY 1

The goal of Study 1 was to explore whether brand attitudes affect the type of executional elements that creatives include in their advertisements. We hypothesized that consumers who work for a brand they dislike would be more likely to include functional elements and less likely to include emotional elements in their ad.

In this study we account for a potential confounder based on previous research showing that functional elements are more likely to be used in ads for functional products and emotional elements in ads for hedonic products (Aaker and Norris 1982). To rule out the possibility that people are more likely to dislike utilitarian brands—for which a functional ad might be a more fitting choice—and to like brands that are hedonic—for which an emotional ad might be more appropriate—we assigned all participants of this study to create advertisements for a brand in the same product category.

Moreover, we instructed participants in this and all other studies to produce an advertisement for the same channel. Indeed, it is possible that people with different brand attitudes might simply envision placing their ad on a specific media channel and designing an ad that they perceive as appropriate for its intended channel (print, radio,

TV, online, etc.). By instructing all participants to create a TV commercial, we ruled out this potential alternative explanation.

Participants and Procedure

Two hundred one participants were recruited from an online pool (Prolific) and took part in this study in exchange for a small monetary compensation (M_{age} = 33.98, SD = 12.38; 22.39% male). Participants were allocated to one of two brand-attitude conditions: in the positive (negative) brand-attitude condition, participants wrote down two brands of fast-food restaurants that they like (dislike) the most; next, they indicated which of these two brands they like (dislike) the most and created a script for a TV commercial for this brand. As an attention check, participants reported whether they wrote a commercial for a brand they like or for a brand they dislike (one 3-point item: *I wrote a TV commercial for a brand I dislike*; *I wrote a TV commercial for a brand I like*; *I do not remember/I am not sure*.) As the last step of the procedure, in this and all other studies, participants reported their demographic information and were debriefed.

Results and Discussion

We excluded four participants who failed the attention check and who did not follow the instructions (for example, participants who wrote about unrelated topics or wrote something negative about the brand). All exclusion criteria were preregistered.

Two independent judges blind to conditions and hypotheses coded whether each ad was characterized by functional elements (1 = *Yes*, 0 = *No*) and/or emotional elements (1 = *Yes*, 0 = *No*), based on validated definitions of functional and emotional elements (Aaker and Norris 1982; Holbrook and Batra 1987; Zarantonello, Jedidi, and

Schmitt 2013). Disagreements were solved through discussion (a previously validated method; Akpinar and Berger 2017; Chandy et al. 2001; To and Patrick 2021). There was sufficient agreement between coders for both dependent variables (functional elements: $\kappa = .88$, $p < .001$; emotional elements: $\kappa = .87$, $p < .001$).

For instance, an ad containing phrases such as "voiceover highlighting new and fresh coffee beans" or "always serving fast but fresh food" was coded as including functional elements. An ad containing phrases such as "mouthwatering good burger with juicy chicken" or "[customers] have love hearts in their eyes" was coded as containing emotional elements. Of note, an ad could be coded as containing both functional and emotional elements.

We tested the effect of attitudes (brand disliking vs. brand liking) on the likelihood of including functional elements and emotional elements in the advertisement. A binary logistic regression showed that brand attitudes influenced the type of executional elements featured in the advertisement. Participants who worked for a brand that they disliked were more likely to include functional elements in their ads (B = .512, Wald = 2.962, $p = .085$; model: $\chi^2(1) = 2.988$, $p = .084$) and less likely to include emotional elements (B = -.490, Wald = 2.715, $p = .099$; model: $\chi^2(1) = 2.734$, $p = .098$) compared to participants who liked their brand – even though we note that these effects were marginally significant.

STUDY 2

In Study 2, we tested whether Study 1's results were replicated in a different consequential sample: professional advertising creatives. For this, we conducted a field

experiment in 18 national and international advertising agencies (Havas, Leo Burnett, Ogilvy, Young & Rubicam, Publicis Groupe, Fullsix, among others).

In Study 1 we ruled out product type (utilitarian vs. hedonic) as an alternative explanation for the observed effect by assigning participants to a brand within the same product category. By contrast, in this study we employed a more naturalistic experimental setting and did not constrain professional creatives to focus on a given product category; our participants self-reported their most liked and disliked brand in any category. Because creatives came from different agencies (national and international) and had different levels of expertise (from 1 to 30 years of experience), we employed a within-subject design to account for individual differences that could affect the outcome.

Moreover, to prevent the possibility that creatives spend more time writing a script for their most-liked brand than they do for their most-disliked brand, we gave them the same limited time to complete each script, and we closely monitored that they used the allotted time as instructed. Indeed, research claims that the time employed in a creative process affects both the process and its outcomes (Amabile, Hadley, and Kramer 2002). By keeping time constant between conditions, we ruled out the possibility that the effect of brand attitudes on the type of executional elements included in an ad is driven by the time devoted to the creative task.

Participants and Procedure

Ninety-eight professional advertising creatives (M_{age} = 32.22, SD = 7.45; 59.2% male) from 18 advertising agencies participated in this experiment. In the first part of the study, creatives completed an online questionnaire in which they listed three brands

that they liked the most and three brands that they liked the least. Then they indicated which of these brands they liked the most and the least and answered a series of filler questions. As a manipulation check, participants rated how much they liked their most liked and most disliked brand (1 = *Very little*, 7 = *Very much*). In the second part of this study, 1 to 5 days later, we held an experiment in the facilities of each advertising agency. Each creative wrote a TV commercial script for their most liked and most disliked brand (within-subject) in counterbalanced order. Participants had 15 minutes to complete each script. Finally, participants self-reported how much effort they put into creating each script (1 = *Very little*, 7 = *Very much*). We also collected variables regarding professionals' ability to forecast consumers' responses toward their work. These variables are reported and analyzed in study 1 of Chapter 3.

Results and Discussion

As intended, creatives liked their most-liked brand (M = 6.46, SD = 0.65) more than their most-disliked brand (M = 1.51, SD = 0.89; t(84) = 36.73, $p < .001$). Moreover, creatives liked their most-liked brand as much as they disliked their most-disliked brand, with their liking ratings equally distant from the midpoint of the liking scale (= 4), which indicated neutral attitudes toward the brand (negative brand attitudes: M = 2.54, SD = .75; positive brand attitudes: M = 2.46, SD = .65; t(84) = -.854, p = 0.396).

Two independent judges blind to conditions and hypotheses coded the ads as in Study 1. To illustrate, an ad containing phrases such as the following would be coded as including functional elements: "Voice-over: The grass is always greener on the other side. Especially when she uses Monsanto seeds." An ad containing phrases such as "She

reaches a vast field of poppies, looking just like an impressionist (…) painting of [one of] last century's great painters" would be coded as including emotional elements. Of note, an ad could be coded as containing both functional and emotional elements.

We anonymized brand names in the scripts to preclude the possibility that coders' own brand attitudes might influence their coding. We could not anonymize the brand in 13 scripts because these scripts' interpretation was dependent on the brand's name (for example, the ad included a pun on the brand name). Because brands could belong to different categories, coders were informed about the product category for the brand in each commercial (for example, newspaper, airline, tobacco, etc.). Coders displayed high agreement for both dependent variables (functional: $\kappa = .859$, $p < .001$; emotional: $\kappa = .877$, $p < .001$).

We ran generalized estimating equations (GEE) models to analyze this study's nested data (within-subject) with binary outcomes (Ballinger 2004). As predicted, negative brand attitudes significantly increased the likelihood of including functional elements in an ad (B = .920, Wald = 11.009, $p < .001$; model: $\chi^2(1) = 11.009$, $p < .001$). Moreover, negative brand attitudes significantly decreased the likelihood of including emotional elements (B = -.846, Wald = 4.845, $p = .028$; model: $\chi^2(1) = 4.845$, $p = .028$). We conducted the same analysis as above, excluding the 13 scripts in which the brand was not anonymized, and the pattern and significance of results did not substantively change. Effort was not significantly different between the negative (M = 3.74, SD = 1.75) and positive brand-attitude conditions (M = 3.44, SD = 1.78; t(90) = 1.251, $p = .214$), and is therefore an unlikely explanation for the observed effects.

In sum, this study replicated Study 1's results in a sample of professional creatives. Even though professionals work with brands on a daily basis and have

extensive training, their expertise does not wash out or substantively change the effect. Thus, this study underscores the practical relevance of this research. In the following study we provide the first evidence of our proposed mechanism by assessing whether people believe they are biased when they work for a brand that they dislike and what strategies they perceive as most suitable to overcome this bias.

STUDY 3

In this study we assessed individuals' beliefs concerning how their brand attitudes might affect the outcome of their work. Specifically, we tested whether individuals believed that their brand attitudes would have a positive, negative, or no impact on their work. Similar measures relying on self-reports have been employed to assess perceived bias in previous research (Herzog, Hattula, and Dahl 2021; Perry, Murphy, and Dovidio 2015; Plant and Devine 2003). We also measured which strategy participants deemed appropriate to write a good commercial, given their brand attitudes. We predicted that participants with negative (vs. positive) brand attitudes would be more likely to believe that their attitudes could impact their work negatively and that they would deem it more important to stay rational and suppress emotions.

Participants and Procedure

Two hundred eight participants (M_{age} = 35.52, SD = 11.94; 31.25% male) were recruited from an online pool (Prolific) to participate in this study in exchange for a small monetary compensation. Participants were asked to imagine that they worked in an advertising agency and that they needed to create a commercial. Each participant was assigned to one of two brand-attitude conditions: in the positive-attitude condition, they

imagined working for a brand they like, and in the negative-attitude condition, they imagined working for a brand they dislike. They then had to answer two questions concerning their scenario.

First, they answered the following: “In which way would you believe that your attitude toward the brand could potentially impact your work?” Participants could select one of three answers: *I would feel that my attitude toward the brand could impact my work positively; I would feel that my attitude toward the brand could impact my work negatively; I would not think that my attitude would impact my work in any way*.

Next, participants responded to the following question: “To what extent would each of the following behaviors be important to implement in order to produce a good commercial for the brand?” Participants rated the importance of three behaviors: expressing emotions, suppressing emotions, and staying rational (1 = *Not at all important*, 7 = *Very important*).

Finally, as an attention check, participants reported whether they imagined needing to create a commercial for a brand they like or for a brand they dislike (single 3-point item: *I imagined that I needed to create a commercial for a brand I like; I imagined that I needed to create a commercial for a brand I dislike*; *I don’t remember or I am not sure*.)

Results and Discussion

As preregistered, we excluded 12 participants who failed the attention check. A multinomial logistic regression revealed that participants who imagined working for a brand they dislike (vs. like) were more likely to believe that their attitudes would have a negative impact on their work rather than positive (B = 6.013, Wald = 31.923, $p < .001$)

or no effect (B = 2.584, Wald = 5.870, p = .015), as expected. Moreover, independent sample t-tests indicated that participants in the negative-attitude condition rated suppressing emotions (t(184) = 8.46, p < .001) and staying rational (t(182) < 4.54, p < .001) as more important strategies to produce a good commercial, and expressing emotions as less important (t(161) = -7.615, p < .01), compared to participants in the positive-attitude condition (Table 1).

TABLE 1

PERCEIVED IMPORTANCE OF STRATEGIES TO PRODUCE A GOOD COMMERCIAL

		Mean Importance Ratings		
Attitudes	***Strategy:***	***Suppressing emotions***	***Staying rational***	***Expressing emotions***
Positive		3.21[a] (1.445)	5.64[b] (1.20)	5.47[c] (1.11)
Negative		5.16[a] (1.755)	6.34[b] (0.923)	3.86[c] (1.78)

Note: Standard deviations in parentheses.
Superscripts denote significant differences.

In sum, participants perceived that their negative brand attitudes could interfere with their ability to produce good work. Moreover, they believed that it would be important to stay rational and suppress emotions to correct their perceived negative bias. Thus, this study offers evidence in line with our prediction that creatives apply these two strategies when they do not like a brand.

In this study participants with negative brand attitudes reported that suppressing emotions and staying rational would be appropriate strategies to produce a good commercial. However, we still need to test that the effect is driven by creatives' negative attitudes and their biased perceptions. A simple alternative explanation for the observed effects could be that individuals with positive brand attitudes have more

positive emotions to express, whereas people with negative brand attitudes have fewer positive emotions (or none), and that is why we observe less emotional content in their scripts. In the next study we obtain evidence consistent with our proposed mechanism and inconsistent with this alternative.

STUDY 4

In Studies 1 and 2 we observed that negative brand attitudes (vs. positive brand attitudes) increase the likelihood of including functional elements in ads and reduce the likelihood of including emotional elements in an advertisement. We proposed that this is driven by an attempt to overcome a perceived bias among people with negative brand attitudes. However, a possible alternative explanation is that positive brand attitudes drive the observed effects. Indeed, individuals with positive attitudes toward a brand might simply have more positive emotions to express about this brand, compared to people with negative brand attitudes. It is possible that the observed effect of brand attitudes on executional elements is not due to a perceived bias among people with negative attitudes but to the mere presence of more positive emotions toward the brand among people who like the brand. In Study 4 we tested this alternative explanation against our hypothesized mechanism by adding a neutral brand-attitude condition.

Our mechanism predicts that people with negative brand attitudes—who perceive that they have a bias to overcome—are more likely to include functional elements and less likely to include emotional elements when creating ads, compared to people who do not perceive that they have a personal bias to overcome (i.e., those with positive or neutral brand attitudes). The ads produced by participants with positive and neutral brand attitudes should include the same type of executional elements since these

participants are equally unlikely to feel biased. Instead, the alternative mechanism predicts that participants with positive brand attitudes—who presumably have positive emotions to express about the brand—are more likely to include emotional elements in their ads and less likely to focus on functional elements, compared to people who have fewer or no positive emotions to express (i.e., participants with neutral or negative brand attitudes).

Whereas in Studies 1 and 2 we measured brand attitudes, in this study we manipulated them by presenting participants with different descriptions of a fictitious brand. Manipulating attitudes allow us to rule out potential confounding effects related to brands that people like and dislike; therefore, we can make stronger causal claims about the role of brand attitudes.

We pretested brand descriptions to verify that each condition induced negative, neutral, and positive brand attitudes, as intended. One hundred twenty-two university students (33.3% male; age was not recorded due to error), randomly assigned to different attitude conditions, reported their attitude toward the brand in their scenario (one 7-point item; 1 = *Negative*, 4 = *Neutral—neither positive nor negative*, 7 = *Positive*). Results revealed that participants' brand attitudes in the neutral-attitude condition were not significantly different from 4 (i.e., the midpoint of our attitude measure, indicating neutrality; M = 3.88, SD = .73; t(24) = -0.827, p = .417). Moreover, an ANOVA revealed that the positive brand-attitude condition (M = 5.28, SD = 1.24), the negative brand-attitude condition (M = 2.88, SD = 1.01), and the neutral brand-attitude condition (M = 3.88, SD = .73) elicited significantly different attitudes toward the brand ($F(2, 72) = 35.199$, $p < .001$), in the intended direction (all planned comparisons: $p < .01$).

Participants and Procedure

One hundred and ninety individuals (M_{age} = 35.4, SD = 13.60; 30.5% male) from an online pool (Prolific) participated in this study in exchange for a small monetary compensation. They were presented with the same information concerning a fictitious fashion brand. Namely, they read: *"Martin Orth is a luxury fashion brand targeting both men and women. It was created in 1993, in England. Its main products are shirts and coats, and their color palette is mostly neutral."* They were then assigned to a brand-attitude condition. Participants in the positive- (negative-) attitude condition read: *"Several customers have praised (complained about) employees' behavior in the stores; customers tend to be satisfied (dissatisfied) with the brand, overall."* In the neutral condition, participants read: *"Several customers have praised employees' behavior in the stores whereas others complained; customers tend to have mixed opinions about this brand."* Subsequently, participants had 10 minutes to write a TV commercial for this brand. Finally, they answered questions regarding the task: difficulty (1 = *Very easy*, 7 = *Very difficult*), effort (1 = *Very little effort*, 7 = *A lot of effort*), enjoyment (1 = *Not at all*, 7 = *Very much*), and affect (10-item scale; based on PANAS; Watson, Clark, and Tellegen 1988; all items: 1 = *Very little*, 7 = *Very much*).

Results and Discussion

As preregistered, we excluded six participants who did not follow the instructions—for example, they wrote about unrelated topics or wrote something negative about the brand. The first author, blind to conditions, coded the advertisements based on the coding scheme used in Studies 1 and 2. In our final analysis, the coding will be submitted to two independent judges, blind to conditions and hypotheses, as in

Studies 1 and 2. To illustrate, an ad containing phrases such as the following would be coded as including functional elements: “Come to us for help with choosing that special outfit (…) Extra special promotions in store in the next 7 days. Come and see what we have to offer!” An ad containing phrases such as the following would be coded as including emotional elements: “Set in a desert. (…) the colors [of the clothes] are similar and blend into the hills. The sun shines and the models are lying on the hills (…). They rise and the camera zooms in on the shirts they are wearing.” Of note, an ad could be coded as containing both functional and emotional elements.

Functional and emotional elements. We tested the effect of brand attitudes (positive, neutral, negative) on the likelihood of including functional and emotional elements in the script of the commercial. A binary logistic regression showed that negative brand attitudes increased the likelihood of including functional elements in the ad, compared to participants assigned to conditions of positive brand attitude (B = .629, Wald = 2.993, p = .084) and neutral brand attitude (B = .633, Wald = 2.848, p = .09). The likelihood of including functional elements was similar between the positive and neutral brand-attitude conditions (B = -.004, Wald = 0.000, p = .991).

In terms of emotional content, brand attitudes significantly influenced the likelihood of including emotional elements in the ad. Specifically, negative brand attitudes reduced the likelihood of including emotional elements, as compared to positive (B = -.820, Wald = 4.835, p = .028) and neutral brand attitudes (B = -.876, Wald = 5.071, p = .024). The likelihood of including emotional elements was similar between the positive and neutral brand-attitude conditions (p = .888).

Effort, task enjoyment, task difficulty. We ran three ANOVAs to test differences between conditions in terms of effort, task enjoyment, and task difficulty. None of the

variables were significantly different between conditions, indicating that these variables are unlikely confounders (Table 2).

Affect. We ran two ANOVAs, with brand-attitude conditions as factor and positive and negative affect as dependent variables. There were no differences between conditions in terms of positive ($F(2, 181) = .298$, $p = .743$) or negative affect ($F(2, 181) = 1.57$, $p = .211$; Table 2). Thus, emotions are unlikely to explain the effect of brand attitudes on the choice of executional ad elements. These results further rule out the alternative explanation that participants with positive brand attitudes experience more positive emotions—and therefore focus more on emotional rather than functional elements—as compared to participants in the other conditions. Another implication of these findings is that the effect on executional elements is not driven by negative emotions among participants with negative brand attitudes. Indeed, previous research suggests that negative moods increase rationality (Alloy and Abramson 1979; Gotlib, Mclachlan, and Katz 1988; Keller, Lipkus, and Rimer 2011; Pham 2006). However, the current evidence rules out this possibility.

TABLE 2

CONFOUNDERS: EFFORT, TASK ENJOYMENT, TASK DIFFICULTY, AND AFFECT

Brand Attitudes	*Effort*	*Task enjoyment*	*Task difficulty*	*Negative affect*	*Positive affect*
Positive	5.55 (1.13)	4.40 (1.66)	4.69 (1.58)	1.80 (1.08)	3.89 (1.47)
Neutral	5.74 (.99)	4.04 (1.68)	5.32 (1.38)	1.87 (1.00)	3.90 (1.29)
Negative	5.44 (1.35)	3.76 (1.96)	4.90 (1.81)	2.15 (1.34)	3.73 (1.54)

Note: Standard deviation in parentheses.

In summary, the pattern of results in this study is inconsistent with the alternative explanation that positive emotions among creatives with positive brand attitudes drive the effect. If this were the case, ads created by participants with positive brand attitudes should differ from ads created by participants with neutral and negative attitudes, who presumably have fewer or no positive emotions about the brand. However, we did not observe this. The ads of participants with positive and neutral brand attitudes were similar. Moreover, we found that participants' affect was similar between conditions, which also ruled out that increased rationality is driven directly by negative mood.

Instead, in conjunction with Study 3, the overall pattern of results is consistent with our hypothesis. We posited that the effect of brand attitudes on the choice of executional ad elements is driven by a perceived bias among people with negative brand attitudes. This implies that their ads should include more functional and fewer emotional elements, compared to people who do not perceive themselves to be biased, and that people with similar bias perceptions should produce similar types of ads. Our

results are consistent with this theorizing. We observed that people who perceive themselves to be biased (those in the negative-attitude condition) produced ads with more functional elements and fewer emotional elements, compared to participants who did not perceive themselves to be biased (those in the neutral- and positive-attitude conditions, whose ads contained similar appeals). In sum, in conjunction with Study 3, this study rules out emotions as an alternative mechanism for the observed effects and offers evidence consistent with our mechanism—a perceived bias among people with negative attitudes.

GENERAL DISCUSSION

This work provides evidence that negative brand attitudes increase the likelihood of including functional elements and decrease the likelihood of including emotional elements in an ad. We observed this effect among both non-professional (Study 1 and Study 4) and professional creatives (Study 2). We hypothesized that when creatives work for a disliked brand, they feel that their work could be impacted negatively, and they intuitively believe that they should suppress their emotions and stay rational to produce a good commercial. We propose that by doing this, creatives inadvertently compromise their ability to express any emotion and consequently are less likely to produce emotional ads. At the same time, they are more likely to rely on rational arguments and use utilitarian benefits in their ads. As evidence for this proposed mechanism, we found that people self-report staying rational and suppressing emotions as important strategies to produce good work when they dislike a brand (Study 3). Moreover, Study 4 provided evidence that is inconsistent with an alternative mechanism but consistent with our hypothesized mechanism. Namely, we observed that

participants with positive and neutral brand attitudes were similarly likely to produce advertisements with functional and emotional elements. Meanwhile, participants with negative brand attitudes were more likely to include functional elements in the ads and less likely to include emotional elements as compared to participants with neutral and positive brand attitudes. This pattern of results is inconsistent with an alternative mechanism whereby people with positive brand attitudes simply have more positive emotions to express in their ads than people with negative brand attitudes. If that were the case, we should have observed that people with positive brand attitudes produced ads with more emotional and fewer functional elements compared to the neutral- and negative-attitude conditions. Instead, the pattern of results is consistent with our proposed mechanism among creatives with negative attitudes, who became more rational and less emotional to reduce a perceived bias, compared to creatives with neutral and positive brand attitudes, who had no perceived bias to overcome.

Alternative mechanisms

Our studies ruled out other potential alternative explanations as well. For instance, it is possible that people are more likely to like brands with symbolic and emotional qualities and to dislike brands that have utilitarian qualities; thus, the type of brand—hedonic or utilitarian—might be the source of the effect on executional ad elements, rather than brand attitudes. We ruled out this possibility by keeping the product category constant (Study 1) or by assigning participants to the same fictitious brand, for which attitudes were manipulated (Study 4). Moreover, our studies negated the possibility that the effect of attitudes on executional ad elements is driven by an implicit choice of a specific channel for the ad by assigning all participants to the same

media channel. Indeed, if not instructed to write an ad for a specific channel, participants in different conditions might have envisioned a different target channel for their ad (e.g., radio, TV, magazine), which could promote the inclusion of functional or emotional elements. For instance, emotional elements might be more likely to be included in a TV ad—in which it is possible to use captivating visuals and sounds—than in print ads. We also ruled out the concept of participants spending more time on creating an ad for a brand they like than for a brand they dislike by setting a fixed amount of time to complete the task in Studies 2 and 4 (15 and 10 minutes, respectively). Finally, across studies, we rule out task effort, difficulty, enjoyment, and affect as potential alternative mechanisms.

Theoretical and Practical Contributions

Our research offers several theoretical contributions. First of all, our results corroborate prior research showing that bias awareness might trigger strategies to overcome a perceived bias (Devine et al. 2012; Maxfield et al. 2020; Stewart and Payne 2008). Even though some research posits that individuals are not aware of their biases or underestimate their propensity to be biased (Wang and Jeon 2020), our results are more closely aligned with research showing that people are often aware of their biases and engage in strategies to correct them (Bollich, Rogers, and Vazire 2015; Herzog, Hattula, and Dahl 2021).

Of note, we are agnostic as to whether participants are accurate in their perception that negative brand attitudes might impact their work negatively. In other words, we are agnostic as to whether negative brand attitudes are indeed a source of bias in this context. Instead, we focus on creatives' perception of bias and its consequences,

namely: 1) the strategies that creatives employ to deal with a perceived bias, and 2) the impact that these strategies have on subsequent creative expression. By investigating these points, this research offers valuable contributions to the literature on creativity. First, we document that the object and nature of a creative task—creating work involving a disliked object—trigger specific strategies to deal with the task. Second, we observe novel and important consequences of these strategies on the outcomes of creative work.

This research has substantial practical implications. Namely, it challenges the intuitive notion that creatives' negative brand attitudes might be detrimental to ad performance (Blythe 2007; de Jesus et al. 2013; Kover 1995; Phillips et al. 2014). Instead, it shows that brand attitudes affect the type of elements that creatives use in their ads. Choosing a creative who dislikes a brand can be beneficial in situations in which functional ads outperform emotional ads, such as when brand evaluations need to be enhanced (Akpinar and Berger 2017) or products are entering new markets (Chandy et al. 2001). Thus, our research suggests that, contrary to conventional wisdom, assigning creatives to brands they dislike might be more effective in achieving certain brands' communication objectives.

Chapter 3.

Creatives' Brand Attitudes Affect Forecasting Accuracy

This chapter is an extension of the research presented in Chapter 2, in which I investigated how creatives' brand attitudes affect the type of work they produce and demonstrated that creatives with negative brand attitudes are more likely to include functional elements and less likely to include emotional elements in ads compared to creatives with positive brand attitudes. In this chapter I expand Chapter 2's research by investigating a subsequent behavior. I show that creatives with negative brand attitudes more accurately predict how consumers will like the ads they produce than creatives with positive brand attitudes. In both chapters I propose that negative brand attitudes lead to more rational processes that substantively impact creatives' performance.

THEORETICAL BACKGROUND

Advertising creatives need to predict the potential success of their ideas to select the best ones to present to managers or clients. However, this is not an easy task. Prior research has demonstrated that often there is little connection between advertising creatives' evaluation of their commercials and other people's evaluations of the same commercials (Kover, James, and Sonner 1997). Importantly, the inconsistency between consumers' and creatives' predictions has considerable downstream consequences and might cause brands to underperform in the market (Anglada-Tort, Keller, Steffens, and MüLlensiefen 2021; Berg 2016; Kornish and Ulrich 2014; Luffarelli, Stamatogiannakis,

and Yang 2018; Modig and Dahlen 2020). Instead, creatives who are better able to accurately forecast their performance are more likely to succeed because they can better predict consumer reactions to their work.

Prior research suggests that creatives overestimate how positively consumers will respond to their ideas (Berg 2016). For instance, research shows that this bias is pervasive: students overrate their predictions for their exam performance (Serra and DeMarree 2016); lawyers overestimate their likelihood of winning cases (Loftus and Wagenaar 1988); CEO's are overconfident regarding their company performance and value (Dunning, Heath, and Suls 2004), and clinical psychologists' decisions are more confident than accurate (Oskamp 1965).

Research also suggests that individuals are not able to correct this bias on their own. Correcting this bias often requires external input—for example, individuals benefit from consulting other colleagues or from using market research data to inform their evaluations (Herzog et al. 2021; Hirt and Markman 1995; Ross 2015). In sum, previous research suggests that creatives are unable to correct their forecasts spontaneously and need to employ bias-correction strategies that rely on external sources. In this work, we argue that this is not always the case and demonstrate conditions under which creatives spontaneously and intrinsically correct their overestimation bias in an effective way.

We propose that creatives are better at predicting the extent to which consumers will like their work when they produce creative work for a brand they dislike, as opposed to a brand they like. We present one exploratory pilot study and one field study that provide support for this hypothesis, and we discuss a potential mechanism for this novel and important effect, as well as alternative mechanisms.

We propose that creatives with positive brand attitudes fall into well-documented forecasting inaccuracy—they tend to overestimate the success of their work because they are motivated to see themselves and their actions in a positive light. In contrast, creatives with negative brand attitudes are better at forecasting consumers' responses because they experience contrasting thoughts: on the one hand, they are motivated to evaluate their work positively – just like anybody else; on the other hand, they believe their negative brand attitudes might have affected their work negatively. As a consequence, they engage in more rational thinking processes that yield more accurate predictions.

From a theoretical standpoint, this research contributes to the literature on biases in marketing. Specifically, current motivational theories (self-enhancement reasoning, wishful thinking, etc.) do not explain creatives' forecasting accuracy (Alicke and Sedikides 2009; Boiney, Kennedy, and Nye 1997; Serra and DeMarree 2016). Indeed, these theories only predict creatives' overestimation and cannot explain why, under certain conditions, creatives make accurate predictions. We fill this gap by investigating a previously overlooked factor: brand attitudes. Specifically, we show that brand attitudes change individuals' ability to accurately forecast consumers' responses. By doing so, this work answers a call for identifying factors able to improve individuals' forecasting accuracy (Berg 2016). We also extend previous research by demonstrating that creatives' brand attitudes not only have a profound impact on the outcome of the work (Chapter 2) but also influence evaluations of their own work. We provide evidence that creatives do not need instructions, market research, or training to be debiased (Herzog, Hattula, and Dahl 2021; Todd, Higgs, and Mumford 2019); they are not biased when they work for a brand they dislike. Interestingly, something apparently

negative turns out to be quite useful—indeed, there is a silver lining on working for brands we dislike.

This work has important implications for advertising creatives: they should not necessarily avoid working for a disliked brand; this decision might improve their performance since they will be more likely to correctly identify their best ideas. Moreover, managers can also use this knowledge to create stronger teams with different skills—including a member who has negative brand attitudes might ensure that the potential of ideas for that brand is assessed more accurately. This simple solution of accurately predicting consumers' evaluations might help advertising companies to increase their revenues. Finally, this solution is less costly and longer-lasting than other commonly used interventions. Indeed, debiasing interventions tend to be demanding: they require reorganizing structures and systems, including altering internal processes (Bragger et al. 2002; Huang, Li, and Li 2019), and they entail effortful practices or substantial time and administrative costs. For instance, these procedures might involve re-evaluating estimates, incorporating the opinion of other colleagues into one's own (Ross 2015), or conducting extensive training sessions (Todd, Higgs, and Mumford 2019).

HYPOTHESES DEVELOPMENT

A vast body of research has shown that individuals overestimate their likelihood of encountering positive events in the future (Sharot and Garrett 2016; Sharot 2011; Brown 2012). This is prominent in all kinds of areas, from health to education (Fischhoff, Slovic, and Lichtenstein 1977; Pronin, Lin, and Ross 2002; Serra and DeMarree 2016; Weinstein and Klein 1995). Importantly, individuals tend to

overestimate the value of their performance in different domains (Buehler, Messervey, and Griffin 2005; Fuchs, Sting, Schlickel, and Alexy 2019); in particular, research has shown that professional creatives are inaccurate when evaluating their ideas—specifically, they tend to overvalue them (Berg 2016). This well-documented phenomenon is due to different reasons, including individuals' desire to see themselves in a positive light (Alicke and Sedikides 2009) and individuals' motivation to produce a good output (Boiney, Kennedy, and Nye 1997; Babad and Katz 1991).

Importantly, a tendency to overestimate the value of one's performance causes unwanted consequences. For instance, it leads to undervalued risks or unrealistic expectations (Sharot and Garrett 2016). Similarly, in an advertising context, it is important to avoid overestimating the success of an ad since it is crucial to achieving accurate predictions of consumers' responses and launching ads that will perform better in the marketplace.

Most successful attempts to reduce overestimation reported in previous literature were based on external interventions. Researchers manipulated different factors: accountability (Sedikides, Hardin, Herbst, and Dardis 2002), mindsets (Koole and Spijker 2000), information availability (Weinstein 1983, see also Weinstein and Klein 1995), risk perceptions (Helweg-Larsen and Shepperd 2001), among others. However, research has overlooked the intrinsic ability of people to reduce this bias. In fact, the few attempts to use individual characteristics as mitigating factors were not successful. For instance, research showed that overestimation persists even when considering different domain expertise (Berg 2016) and different social identities and company roles (Fuchs et al. 2019). More broadly, research has been pessimistic on the possibility that people can correct biases on their own.

Some research states that biases are inevitable and pervasive (Kahneman et al. 1982) because they are an inherent part of human nature and important to survival (Haselton et al. 2009). In particular, a tendency to overestimate is considered one of the most consistent and robust biases documented in psychology and economy (Sharot 2011). Most researchers agree that biases can be corrected only through training, nudging, or other more or less costly external intervention (Carnes et al. 2012; Lee, Quaquebeke, and Leroy 2021; Ross 2015; Thaler and Sunstein 2008).

We propose that creatives can correct their own bias without any external intervention—based solely on their brand attitudes. A central feature of all the projects that creatives work with is the brand associated with them—their client. Like any other consumer, creatives have their own brand attitudes; thus, they could work for brands that they like or dislike. Although brand attitudes strongly influence individuals' perceptions and behavior (Aaker 1997; Fennis and Pruyn 2007; Fournier 1998; Park and John 2010), research has overlooked creatives' brand attitudes as a factor affecting forecasting accuracy.

In the previous chapter we demonstrated how creatives' brand attitudes affect the creative process and its outcomes. Drawing on that research, in this chapter we explore how brand attitudes might also affect creatives' accuracy of subsequent evaluations of their own work.

We propose that creatives who have positive brand attitudes are motivated to overestimate the value of their performance. Indeed, it is well-documented that individuals have a general tendency to maintain or improve their positive self-views (Alicke and Sedikides 2009; Boiney et al. 1997) and to assess their ideas favorably (Beggan 1992; Berg 2016). Thus, creatives with positive brand attitudes will

overestimate the extent to which consumers will like their work. In contrast, creatives who have negative brand attitudes will produce more accurate estimates of consumers' liking of their work. We propose that this happens because creatives with negative brand attitudes—like anybody else—are motivated to overestimate their works' success. However, at the same time, they also believe their negative brand attitudes impacted their work negatively. To resolve these conflicting thoughts, creatives engage in more systematic cognitive processing, resulting in more rational thinking processes. In summary, creatives with negative brand attitudes have reasons to predict both a favorable and an unfavorable outcome, and these inconsistent performance predictors will cause more effortful cognitive processes when forecasting consumers' responses, ultimately resulting in more accurate predictions.

Previous research does not provide direct evidence concerning this hypothesized mechanism but provides suggestive evidence. For instance, research has demonstrated that a message inconsistent with participants' brand preferences induced them to engage in more systematic information processing in reading the message (Maheswaran and Jain 2000).

This work challenges the apparent inevitability of forecasting overestimation and proposes an intrinsic, spontaneous correction for this bias. In this research we show that creatives' negative brand attitudes reduce this overestimation bias and lead to improved forecasting accuracy. In other words, creatives are better able to accurately forecast consumers' liking without the need for external interventions.

Overview

We expect that creatives who have positive brand attitudes overestimate the extent to which consumers will like their work. In contrast, creatives with negative brand attitudes produce less biased predictions—they will estimate how much consumers will like their work more accurately. We tested our predictions in an exploratory pilot study and a field study involving both professional and non-professional creatives. In both studies participants generated creative work for a brand they liked, disliked, or both. Then, creatives' work was evaluated by a relevant target group of consumers who rated it. Of note, similar paradigms have been employed in previous research on forecasting accuracy (Berg 2016; Diedrich, Benedek, Jauk, and Neubauer 2015).

PILOT STUDY

The goal of this pilot study was to explore whether creatives' brand attitudes impact their forecasting ability. We hypothesized that individuals with negative brand attitudes would accurately predict consumers' liking for their work. In this study all participants worked for the same brand—this rules out the possibility that the effect of brand attitudes on forecasting accuracy could be driven by a tendency to like (dislike) brands for which it is more difficult (easier) to predict ad success. Moreover, we chose McDonald's because it is a well-known brand that is likely to elicit different attitudes, ranging from unfavorable to favorable.

Importantly, we incentivized participants to produce their best work by offering a prize to one of the top slogans. This resembles common real-life contexts in which brands reward non-professionals for their work; a famous example is the "Doritos Crash

the Super Bowl" campaign, in which consumers were offered prizes to create commercials to be aired during the Super Bowl.

Participants and Procedure

Ninety-three participants from an online subject pool (Mechanical Turk) took part in this study in exchange for a small monetary compensation (M_{age} = 34.83, SD = 10.30; 56.5% male). First, participants rated the extent to which they liked McDonald's (1 = Not at all, 7 = Very much) among filler questions. Participants then produced a short slogan for the brand. Of note, participants were informed that real McDonald's consumers would rate their slogan as well as slogans from all other participants and that the best slogan would receive a $10 award. Finally, participants forecasted how much other consumers would like their slogan (1 = Not at all; 7 = Very much).

Subsequently, 137 consumers—students from a large European university—participated in a lab study for course credits (M_{age} = 22.64, SD = 3.27; 42.34% male). Consumers were randomly allocated to 30 slogans and rated how much they liked each of them (1 = Not at all; 7 = Very much). They also rated the frequency with which they ate at McDonald's (5-point scale: Always/Never) and how much they liked McDonald's (1 = Not at all; 7 = Very much). As an attention check, we presented consumers with a false slogan, in which we embedded instructions to skip the focal question ("How much did you like this slogan?") and to select "Strongly Agree" as their answer for another unrelated question ("This slogan was appropriate/meaningful/uncommon/different/very creative"). Finally, consumers reported their demographics.

Results and Discussion

We excluded 68 consumers who failed the attention check from the remainder of the analyses. As in previous research, we computed forecasting inaccuracy by subtracting the consumers' liking scores for the commercial from participants' predictions of consumers' liking (Berg 2016).

Inaccuracy. Our mechanism predicts that people with negative brand attitudes—who experience conflicting thoughts about their work performance—use more rational thinking processes to evaluate their work and end up being more accurate in their predictions. We do not expect individuals with positive and neutral brand attitudes to engage in conflicting thoughts because they are motivated only to evaluate their work positively (i.e., they do not perceive any indication of poor performance). Thus, we do not predict a linear relationship between brand liking and forecasting accuracy; instead, we should observe greater accuracy for negative brand attitudes and lower (and similar) accuracy at neutral and positive brand attitudes.

Because this pattern is not linear we opt to conduct a piecewise linear model. This type of model fits a regression model in which the relationship between a dependent and an independent variable incorporates more than one linear regression; these regressions are connected at a breakpoint: a knot that is theoretically meaningful and represents a shift in the pattern (Tishler and Zang 1981). In our case, we expect this knot to occur around the neutral point of the scale. The analysis was conducted in R (version 4.0.5) using the *segmented* package. The calculation of the breakpoint estimate is in line with our prediction (brand attitudes = 2.99); those who expressed a clear dislike for McDonald's (a score below 3 on a 7-point Likert scale) behaved differently from all other participants. A plot of the results (Figure 1) showed the predicted pattern;

nevertheless, we note that the overall model was not significant (B1 = 0.53, t = 0.67, 95% CIs [-1.07, 2.14]; B2 = 0.017, t2 = 0.11, 95% CIs [- 0.29, 0.33]).

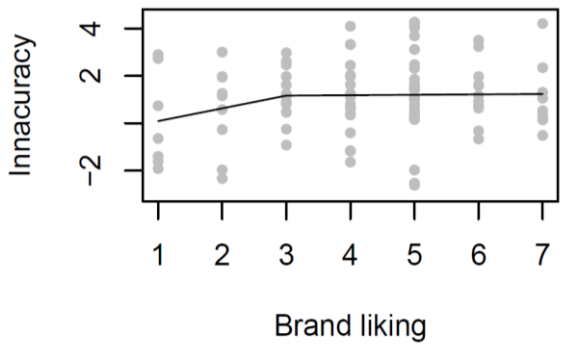

Figure 1. Piecewise linear model. Negative brand attitudes (lower than 3) led to fewer inaccurate estimates, as compared to neutral and positive attitudes (higher than 3).

For exploratory purposes, based on the results of the piecewise regression indicating a knot signaling out brand attitudes scores < 3, we transformed the continuous brand attitudes measure into a categorical one. For this, we created three categories: we coded brand attitudes < 3 as negative (= 1); applying a similar distance from the middle point, we coded brand attitudes > 5 as positive (= 3), and all other brand attitudes scores around the midpoint of the scale as neutral (= 2). Then, we compared the accuracy of each group with zero (indicating perfect accuracy). Interestingly, the inaccuracy of creatives with negative brand attitudes was not significantly different from zero—in fact, these creatives' accuracy was very close to perfect (M = 0.36, SD = 1.93; t(14) = .743, p = .47). In contrast, the inaccuracy of creatives with positive brand attitudes (M = 1.25, SD = 1.34; t(18) = 4.06, p < .001) and neutral brand attitudes (M = 1.18, SD = 1.60; t(56) = 5.58, p < .001) was significantly greater than zero—creatives with neutral and positive brand attitudes overestimated their slogan's performance.

Consumers' brand attitudes and usage. This sample of this pilot study was appropriate since most consumers (70%) reported eating at McDonald's at least sometimes. Moreover, we randomly allocated slogans to consumers with different brand attitudes (M = 4.20, SD = 1.79); therefore, it is unlikely that consumers' brand attitudes drove the observed pattern of results.

Overall, results from this study provide initial evidence supporting our hypothesis. In line with previous research, we observed a general tendency to overestimate the extent to which consumers will like one's work. In contrast, individuals with negative brand attitudes produced more accurate forecasts.

STUDY 1

In this study we tested our hypothesis in a sample of professional advertising creatives—individuals who work with brands daily. Specifically, we conducted an experimental field study in 18 advertising agencies, including Havas, Leo Burnett, Ogilvy, Young & Rubicam, Publicis Groupe, and Fullsix, among others. Participants were professional advertising creatives with up to 30 years of experience, as in Chapter 2. Thus, we employed a within-subject design to account for individual differences in professional experience that could affect the creative outcome as well as forecasting ability. Moreover, the creative task in this study required writing a commercial and not a slogan; thus, we could assess whether our predicted effect occurs with a different type of creative work produced by advertising agencies.

Participants and Procedure

Ninety-eight professional advertising creatives (M_{age} = 32.22, SD = 7.45; 59.2% male) from 18 advertising agencies participated in this exercise. In the first part of the study creatives completed an online questionnaire in which they listed three brands that they liked and three brands that they disliked. Then they indicated which of these brands they liked the most and the least and answered a series of filler questions. As a manipulation check, participants rated how much they liked their most liked and most disliked brand (1 = Very little, 7 = Very much).

In the second part of the study, 1 to 5 days later, we held an experiment in the facilities of each advertising agency. Each creative wrote a TV commercial script for their most liked and most disliked brand (within-subject) in counterbalanced order. Participants had 15 minutes to complete each script. After completing the task, creatives rated the extent to which consumers would like their work (1 = Very little, 7 = Very much) and, as an additional manipulation check, participants self-reported how motivated they felt during each task (1 = Very little, 7 = Very much). Indeed, research indicates that working on a disliked (vs. liked) task should decrease motivation (Christiansen, Sliter, and Frost 2014; Tett, Simonet, and Brown 2013). Participants also completed a battery of questions for a related study, reported in chapter 2 (study 2) and additional exploratory variables for an unrelated study.

Subsequently, 444 consumers (M_{age} = 24.43, SD = 7,11; 64,64% male) from an online pool (Prolific) participated in a rating task in exchange for a small compensation. Consumers were randomly allocated to 12 commercials (six from a disliked brand and six from a liked brand) created by professional creatives in this study. Consumers rated the extent to which they liked each one of these commercials (1 = Not at all; 7 = Very

much) and answered questions for an unrelated study (not part of this dissertation). Participants were blind to conditions and brands—as in Chapter 2, we replaced brand names with the letter "X". We anonymized brand names in the commercials' scripts to preclude the possibility that consumers' own brand attitudes influenced their evaluations of the commercials. We could not anonymize the brand in 13 scripts because these scripts' interpretation required the brand's name (for example, the commercial included a pun on the brand name). Given that brands could belong to different categories, participants were informed about the product category for the brand in each commercial (for example, newspaper, airline, tobacco, etc.).

Results and Discussion

Manipulation check. As expected, creatives liked their most liked brand (M = 6.46, SD = 0.65) more than their most disliked brand (M = 1.51, SD = 0.89; t(84) = -36.73, $p < .001$). Moreover, as expected and in line with previous research, participants felt less motivated to work for a brand they disliked (M = 3.56, SD = 1.88) as compared to a brand they liked (M = 5.36, SD = 1.49; t(90) = -7.177, $p < .001$). We expected participants to overestimate the extent to which consumers would like their work when they liked the brand and were more motivated to work for it. In contrast, we expected participants to produce more accurate forecasts when they worked for a brand they disliked.

Inaccuracy. We assessed inaccuracy the same way as in our pilot study: by subtracting the consumers' liking scores from professionals' predictions of consumers' liking (Berg 2016). We ran a paired samples t-test to analyze whether professional creatives' brand attitudes affect their inaccuracy. This analysis revealed that negative

brand attitudes (M = .047, SD = 1.65) lead to more accurate predictions of consumers' liking than positive brand attitudes (M = .610, SD = 1.37; t(81) = -2.501, p = .014). We conducted the same analysis as above, excluding the 13 scripts in which the brand was not anonymized, and the pattern and significance were replicated.

As in our pilot study, we also tested how close to perfectly accurate creatives were. A one-sample t-test revealed that creatives who produced a commercial for a brand that they disliked accurately forecasted consumers' liking—their inaccuracy scores were not significantly different from zero (M = 0.019, SD = 1.64, t(84) = .109, p = .913). In contrast, creatives who produced a commercial for a brand that they liked overestimated consumers' liking (M = 0.62, SD = 1.35; t(88) = 4.307, p < .001).

In sum, this study replicated our pilot study's results in a sample of professional creatives with a more controlled experimental design. Of note, even though professional creatives work daily with brands and have extensive training, their expertise does not wash out the effect—their positive brand attitudes harm their forecasting accuracy, but negative brand attitudes improve forecasts.

GENERAL DISCUSSION

This research demonstrates that brand attitudes change advertising creatives' ability to predict consumers' liking of their work. We provide evidence that negative brand attitudes increase the accuracy of creatives' forecasts, whereas positive brand attitudes lead to more inaccurate predictions. We observed this effect among both non-professional (pilot study) and professional creatives (Study 1).

We propose that creatives with positive brand attitudes overestimate how much a consumer will like their work because they are motivated to keep and maintain a

positive view about themselves and their creations when predicting consumers' responses—a well-documented cause for overestimating ones' skills and performance (Alicke and Sedikides 2009; Beggan 1992; Boiney et al. 1997). This finding is in line with previous literature showing that individuals who are personally involved or familiar with the domain of the predictions tend to overestimate positive outcomes (Dailey and Mumford 2006).

More interestingly, we observe that creatives with negative brand attitudes predict how much a consumer will like their work more accurately. We propose that these creatives are still motivated to self-enhance and to positively evaluate their performance. However, they also believe that their negative brand attitudes might have affected their work negatively. These inconsistent thoughts create doubts about the outcome of their work and raise the need to rely on more effortful rational thinking. In other words, we argue that individuals respond rationally and forecast performance more accurately under conditions that elicit inconsistent performance indicators.

Of note, this proposition contrasts with research showing that under uncertainty individuals rely on affective inputs because their self is threatened (Faraji-Rad and Pham 2016). We propose the opposite effect in this context: creatives' uncertainty surrounding their performance leads to more rational thinking. Moreover, we challenge prior research showing that people portray themselves in a more favorable light in response to negative performance feedback (Dunning, Leuenberger, and Sherman 1995). In contrast, in our context a potentially negative performance indicator—negative brand attitudes— improves rational thinking and does not increase self-serving assessments.

Alternative mechanisms

It is possible that increased accuracy among creatives with negative brand attitudes is not driven by rational thinking; for instance, creatives might simply misattribute their attitudes toward their brand to the work they produced for that brand. Misattribution is a mechanism whereby emotions elicited by a stimulus are transferred to an unrelated salient stimulus (Jones, Fazio, and Olson 2010). For instance, when people are in a good mood because of good weather, they evaluate their life satisfaction more positively (Schwarz and Clore 1983). In general, misattribution mechanisms often affect people's perceptions (Jones, Fazio, and Olson 2010; Weeks, Humphreys, and Cornwell 2018). However, misattribution is an unlikely explanation for our results. If creatives were misattributing their negative attitudes to their work, they should produce inaccurate forecasts; specifically, they should underestimate the extent to which consumers will like their work. Instead, we found that creatives with negative brand attitudes are more accurate: they overestimate the success of their idea less compared to creatives with positive brand attitudes. In fact, in our studies they are virtually perfectly accurate. In both studies, even the lowest brand liking scores did not lead to underestimation.

A second alternative mechanism for the observed effects is the presence of negative emotions. It seems reasonable to propose that negative brand attitudes elicit negative emotions, which consequently increases accurate predictions. Indeed, research shows that negative moods (vs. positive and neutral moods) induce rationality (Alloy and Abramson 1979; Gotlib et al. 1988; Keller et al. 2011; Pham 2006), which in turn increases accuracy (Keller et al. 2011) and reduces halo effects, fundamental attribution errors, and anchoring biases (Macrae, Bodenhausen, Milne, and Jetten 1994; Pham

2006). However, a negative mood is unlikely to drive the observed effects. Indeed, this effect of negative mood on rationality is driven primarily by sadness, as opposed to other negative emotions. In fact, research shows that other negative emotions might produce the opposite effect (Lerner, Li, Valdesolo, and Kassam 2015; Pham 2006). It is unlikely that negative brand attitudes induce sadness. If anything, consumers who dislike a brand might be more likely to experience anger or despite rather than sorrow (Romani, Grappi, and Dalli 2012).

Theoretical and Practical Contributions

Our research contributes to the literature on managerial biases in marketing. In particular, current theories are insufficient to explain why creatives may be accurate at forecasting their work performance (Alicke and Sedikides 2009; Boiney et al. 1997; Serra and DeMarree 2016). We demonstrate that negative brand attitudes are one factor that makes people more accurate – responding to a previous call to identify factors able to improve individuals' forecasting accuracy (Berg 2016). Moreover, our work informs literature on decision-making by observing that an individual characteristic—negative brand attitudes—can lead to unbiased predictions without the need for external interventions, such as providing specific instructions or relying on market research (Herzog, Hattula, and Dahl 2021; Todd, Higgs, and Mumford 2019). Thus, it offers a less costly and longer-lasting intervention that requires neither a reorganization of internal processes nor practices that entail significant time and administrative costs (Bragger et al. 2002; Huang et al. 2019; Ross 2015; Todd et al. 2019). It also extends literature in advertising by demonstrating that creatives' brand attitudes not only impact

the outcome of their work but also change their ability to forecast consumers' liking for their work (Chapter 2).

Our findings are extremely valuable from a practical point of view. Indeed, promoting ideas that are not interesting to the general public can be a colossal error for companies, whereas accurately predicting the value of an idea is crucial for its market success (Kornish and Ulrich 2014). By showing that creatives who work for disliked brands correctly predict how much consumers will like their work, we demonstrate a silver lining to working on disliked projects. Moreover, by including individuals with negative brand attitudes in a creative team, managers can be more confident in the team's forecasting ability. We propose further research in this domain in the dedicated section below.

Further research

Future research could assess if the observed effect of brand attitudes on accuracy replicates among people who do not produce creative work. For instance, it would be interesting to explore if managers with negative attitudes toward a brand can predict the success of work created for that brand more accurately. Indeed, managers often fail to accurately predict the market success of an idea (Kornish and Ulrich 2014). Moreover, individuals who produce ideas in groups—a common practice for creative teams—are even more prone to overestimate their performance prediction relative to individuals working individually (Fuchs et al. 2019). Thus, it would be interesting to test whether the negative brand attitudes of one or more team members could overcome a group's biased performance forecast.

Chapter 4

Contextual Disgust Reduces Commercials' Memorability

Advertising is seldom consumed in isolation: it must be incorporated in specific media contexts, such as TV programs, YouTube videos, or movies. For example, consumers can see the same ad embedded in a comedy or in a horror movie. These contexts elicit very different emotions that might affect the processing of the ad. In this research we focus on the effect of contextual emotions on advertising memorability.

So far, research has focused on the impact of discrete contextual emotions on ad evaluations (Faseur and Geuens 2006), purchase intentions (Orth, Crouch, Bruwer, and Cohen 2020), the persuasiveness of ad appeals (Griskevicius et al. 2009), the responses toward different types of message framings (Baek and Yoon 2017; Kemp, Chapa, and Kopp 2013), and consumer preferences for certain advertising products (Rucker and Petty 2004). However, the influence of emotional contents on the recall of subsequent events is still underexplored—it is unclear whether specific contextual emotions exert differential effects on memory for subsequent commercials. For example, would a horror movie increase the recall of a subsequent commercial more than a sad movie?

In this work we investigate how a commercial recall differs when it is presented following one of these four different emotional contexts: a disgust context (e.g., TV programs like *Fear-Factor*), a fear context (e.g., horror movies like *The ring*), a sad context (e.g., sad movies like *Titanic*), or a happy context (such as Disney movies like *Ratatouille*).

In this work, we are particularly interested in disgust. Disgust-inducing stimuli are often present in media (for instance in TV newscasts, movies, or reality shows) and

they can be of various types: pathogen-related, moral-related, or sex-related (Amoroso et al. 2020; Oaten, Stevenson, and Case 2009; Shimp and Stuart 2004).

Disgusting stimuli (such as tasting or smelling spoiled food) need to be remembered to produce their effect in future occurrences by preventing or avoiding contaminations – its function depends on memory (Carretié, Ruiz-Padial, López-Martín, and Albert 2011; Knowles, Cox, Armstrong, and Olatunji 2019). Indeed, disgusting content has been demonstrated to be more memorable than other emotions (an effect that is not fully explained by arousal-valence dimensions; Chapman et al. 2013; Ferré, Haro, and Hinojosa 2018).

We argue that this memory salience for disgusting stimuli may rely on prolonged processing of these stimuli that overlaps with the encoding of a subsequent, unrelated stimulus – diminishing its recall. We predict and provide empirical evidence that disgust (vs. fear, happiness, sadness) reduces recall in subsequent commercials. We theorize that disgusting content is particularly strong at keeping the disgust-inducing stimuli salient in a person's mind even after exposure. For instance, after seeing a cockroach, people keep a mental representation of the animal in their minds even after it disappears. This difficulty in disengaging from the disgusting stimulus may detract attention from other unrelated stimuli that appear subsequently. As in this example, when a commercial appears after a disgusting stimulus, the disgust-inducing scene will still be salient in individuals' minds while they watch a subsequent commercial, diminishing the recall of this commercial.

We explain this effect based on the functional role of disgust. Biologically, disgust benefits from an extensive mental rehearsal of the disgust-inducing stimulus because people can effectively retain the source of the contamination. This is not true, to

the same extent, for other emotions. For instance, a sustained exploration of fear-inducing content will be costly: thinking too long about the snake you just saw can prevent you from running away and might result in a snake bite – an immediate response is required (Armstrong and Olatunji 2012; Woody and Teachman 2000). Indeed, fear enhances sensory acquisition to rapidly evaluate the environment and to act accordingly, whereas disgust reduces sensory exposure (Susskind et al. 2008), postponing evaluative attempts. Furthermore, a persistent mental representation of sadness-inducing stimuli can be detrimental because it may trigger rumination—a maladaptive mechanism strongly associated with mental disorders (Aldao et al. 2010; Nolen-Hoeksema 2000). Similarly, overthinking about one's happiness and exploring its drivers can lead to happiness reduction—harming the pro-hedonic function of this emotion (Schooler and Mauss 2010; Wegner 1994); in fact, the role of happiness is to stimulate the exploration of new information and not to dwell on past events (Fredrickson 2001). In sum, this carry-over effect seems to be particularly functional for disgust, more so than other discrete emotions.

To the best of our knowledge, we are the first to propose that contextual disgust reduces commercials' recall as compared to other emotional contexts. We contribute to the emotion literature by suggesting that compared to other emotions, disgust produces stronger carry-over effects that interfere with a proper encoding of subsequent stimuli. We also contribute to the broader discussion concerning different models of emotion (discrete and dimensional) by showing the value of focusing on discrete emotions, as doing so can account for psychological processes specific to each emotion. We additionally inform advertising literature by showing that discrete emotions can have different effects on ad memorability; indeed, our work responds to a call to action to

study the impact of incidental emotions in advertising (Poels and Dewitte 2019). Moreover, the carry-over effects of discrete emotions were seen to influence judgments and intentions in the decision-making literature; we expand this research by showing that the long-lasting effects of discrete emotions can also modify memory-related processes.

This research also has significant practical import; specifically, we offer advertising practitioners advice on how to maximize commercials' recall. According to our results, marketers should avoid placing their commercials as the first or second commercial in the interval of programs/movies that elicit disgust; instead, they should opt for placements in the interval of heart-breaking movies or sorrowful TV programs as a way to improve commercials' recall. Furthermore, media agencies should consider the type of emotional context in which the commercial is embedded as an important factor for the pricing of the commercial spot, a strategy that could be used in conjugation with the reach of the program—the most common pricing strategy.

THEORETICAL BACKGROUND

An extensive stream of research reports the impact of emotions on attention and memory for the emotion-inducing stimulus (Aaker, Drolet, and Griffin 2008; Dolan 2002; Hamann, Ely, Grafton, and Kilts 1999; Kensinger 2004; Sharot and Phelps 2004). For instance, more arousing emotional events were found to be remembered better. The effect of emotional content on the processing of subsequent stimuli has been explored less extensively. Prior research showed that emotional states characterized by valence or arousal (elicited by a particular event) could carry over and influence recall of subsequent unrelated events (Pavelchak, Antil, and Munch 1988; Hurlemann et al.

2005; Puccinelli, Wilcox, and Grewal 2015; Knight and Mather 2009). Valence refers to an event's hedonic tone (pleasantness or unpleasantness), and arousal refers to a state of physiological activation or intensity elicited by an event (Russell 1980).

Some studies have found that arousing emotional contexts increased ad recall (Singh, Churchill, and Singh 1987), whereas others observed the opposite effect (Pavelchak, Antil, and Munch 1988). Moreover, still other researchers have proposed that valence is responsible for ad recall by showing that positive contexts (vs. negative contexts) increased ad recall (Goldberg and Gorn 1987); however, later studies did not replicate this result (Pavelchak, Antil, and Munch 1988). Aside from obtaining conflicting findings, attempts to explain the influence of contextual emotions on the memorability of subsequent events have relied mainly on the same emotional theory: the valence-arousal model. This approach categorizes emotions along two dimensions (valence and arousal). Alternatively, a discrete emotional model contends that each basic emotion has unique physiological, behavioral, and neurological patterns (Eijlers, Smidts, and Boksem 2019; Mauss and Robinson 2009; Zhao, Zhang, and Ge 2018), allowing differences associated with distinct memory processes to vary per emotion.

Notably, prior research has shown that discrete emotions could produce distinct effects on memory that go above and beyond arousal and valence (Levine and Burgess 1997; Lench and Levine 2005; Threadgill and Gable 2019; see appendix A for a brief summary of prior studies). Relevant to our research, priming envy—a discrete emotion of negative valence—increased recall for subsequent information related to envied targets (Hill, DelPriore, and Vaughan 2011). A function-based logic justifies this cognitive consequence on memory; indeed, this targeted memory effect of envy enables an advantage *vis-à-vis* a competitor (such as to increase own position or detract from the

competitor's advantage; Hill, DelPriore, and Vaughan 2011). Based on this, we propose that discrete emotions other than envy may also have specific effects on memory that could depend on their functional role.

Disgust is a response to a stimulus that is considered physically or psychologically unclean. Its ultimate function is to prevent contamination, and this is only possible if one remembers the source of the disgust (e.g., the presence of maggots on food) – memory plays a huge role in its functionality (Amoroso et al. 2020; Carretié et al. 2011; Perone, Becker, and Tybur 2021). Accordingly, disgust-inducing content is recalled better compared to other emotional stimuli (Chapman et al. 2013; Croucher, Calder, Ramponi, Barnard, and Murphy 2012; Ferré et al. 2018). Notably, this memory salience was also found in a marketing context: using disgusting images in anti-tobacco advertisements enhanced ad memorability and changed individuals' behavior (i.e., reduced craving and increased quitting intentions; Clayton, Leshner, Tomko, Trull, and Piasecki 2017).

Researchers argued that disgust-inducing stimuli are difficult to disengage and hamper subsequent tasks' performance (Chapman et al. 2013; Josh M. Cisler, Olatunji, Lohr, and Williams 2009; Perone et al. 2021; van Hooff, van Buuringen, El M'rabet, de Gier, and van Zalingen 2014). We therefore propose that compared to other emotions disgust remains salient in consumers' minds for a sustained period even after exposure, and as a result, may interfere with the encoding of subsequent unrelated stimuli. We hypothesize that disgusting content produces stronger carry-over effects (i.e., mental processing after exposure) than other negative emotions (fear and sadness) or even positive emotions (happiness), and therefore reduces recall for a subsequent commercial most strongly.

HYPOTHESES DEVELOPMENT

Research has found that childhood taste aversions could last 50 years, producing long-term effects on memory (Garb and Stunkard 1974) and that disgusting stimuli attracted more attention (Carretié et al. 2011; Xu et al. 2015) and were better recalled than content from other discrete emotions, such as fear or happiness (Chapman et al. 2013; Croucher et al. 2012; Ferré et al. 2018).

Previous research suggests that memory salience for disgust may be related to how individuals process disgusting content. Attention to disgusting stimuli seems to continue after exposure, suggesting the need for a prolonged period of time to process disgust. For instance, researchers observed that when participants conduct a task (e.g., identification of a word, image, or the position of a line) after the appearance of a disgusting stimulus, they perform more poorly (i.e., slower latencies or less accurate responses) as compared to other emotions (fear, happiness, and neutral emotions; Chapman et al. 2013; Josh M. Cisler et al. 2009; Perone et al. 2021; van Hooff et al. 2014).

These studies indicate that disgust processing interferes with the performance of subsequent tasks, which suggests that disgust continues to recruit mental resources for longer, making it more difficult to disengage from it. Of note, these previous investigations studied only short intervals of time between the disgust onset and subsequent tasks (ranging from 480 ms to 1300 ms) because the goal was to investigate the immediate performance on the following task (Chapman et al. 2013; Perone, Becker, and Tybur 2021; Josh M. Cisler et al. 2009).

We propose that disgust may produce even longer-lasting effects that impair the memorability of subsequent events. Disgusting content continues to recruit mental

resources even after the emotional content disappears. In other words, we theorize that disgusting scenes remain salient in individuals' minds even when the disgust-inducing content is no longer present. Importantly, we hypothesize that a consequence of this process is attention-reduction for subsequent, unrelated events. When a commercial appears after a disgusting scene, attentional resources allocated to the commercial will compete with those assigned to maintain the processing of disgusting content. Individuals may thus still be processing past disgusting content even in the presence of a new stimulus, which will receive less attention. In sum, disgusting stimuli produce a carry-over effect that interferes with the encoding of a subsequent event/commercial.

In this work we propose that the influence of disgust on subsequent events produces sustained attentional effects that can last for several minutes. This hypothesis is corroborated by previous research indicating that emotional brain states can even last for hours and influence how new information is encoded (Tambini, Rimmele, Phelps, and Davachi 2017).

We argue that the detection and processing of disgust occur more slowly than other discrete emotions because this sustained exploration is necessary for the emotion to be recalled and exert its function (i.e., pathogen threats evaluation and subsequent memory retention). Importantly, this evaluation of the disgust-inducing stimuli is limited during the exposure since individuals reduce sensory acquisition at that moment (e.g., lowered brows, decreased eye aperture, and compression of the nose; Susskind et al. 2008). Moreover, this emotion should require extensive processing because the disgust system is prone to false alarms (given that errors can be fatal; Oaten, Stevenson, and Case 2009); consequently, only a mental rehearsal of the stimuli could assess its potential effect on one's health in future occurrences.

This persistent mental exploration is neither similarly beneficial nor required for other emotions, such as fear: fearful stimuli, as danger cues, present greater urgency (Armstrong and Olatunji 2012), amplifying sensory acquisition (e.g., increased eye aperture) to enable an immediate evaluation of the threat and the required fast response. A prolonged exploration can even impose a biological cost; we may compromise a quick response by processing the fear-inducing stimulus long after its exposure. For example, we need to run away immediately from an attacker rather than keep thinking about the attacker. As another example, sustained processing of sadness-inducing stimuli can also bring negative consequences since it could trigger rumination, which is strongly associated with mood disorders and detrimental to individuals' health (Aldao et al. 2010; Nolen-Hoeksema 2000). Finally, this prolonged emotional processing also does not offer advantages for positive emotions. Happiness functionality is to make individuals focus on future occurrences (not past events); positive emotions create the urge to explore new information or experiences and help individuals prepare the organism for future challenges (Fredrickson 2001). Indeed, research has claimed that greater happiness occurs when individuals are not thinking about their happiness (Mauss, Tamir, Anderson, and Savino 2011; Schooler and Mauss 2010; Wegner 1994); suggesting that a mental exploration of this emotion can backfire and diminish happiness—going against its pro-hedonic function.

Overview

Based on the above theorizing, we expect that disgusting contexts (vs. happy, sad, fear contexts) will reduce recall of subsequent commercials.

We conducted three studies to assess the impact of emotional contexts on commercials' recall and rule out an alternative mechanism. Study 1 (within-subjects) and Study 2 (between-subjects) revealed that disgust impairs commercials' recall compared to happiness, sadness, and fear. Study 3 provides evidence that arousal and valence cannot explain the effect.

STUDY 1

The goal of Study 1 was to determine if evoking discrete emotions changed recall of subsequent unrelated commercials. We hypothesized that disgusting scenes are particularly harmful to the memorability of the following commercial, compared to scenes eliciting other emotions (happiness, sadness, fear).

The experiment included five happy, five sad, five fear-inducing, and five disgusting videos, as well as five neutral videos—previously validated by Eijlers, Smidts, and Boksem (2019).

We ran a pretest to find the 20 neutral commercials (i.e., low emotional weight commercials) to be placed after the emotional videos. The purpose of including neutral commercials was to isolate the effect of the happy, sad, fear-inducing, and disgusting videos on the memory of subsequent stimuli. If a commercial also induces strong emotions, these emotions could exert a memory effect on their own, or the emotion elicited by the commercial could interact with emotions induced by our contextual videos. In summary, we selected neutral commercials to control for any emotional contribution that the commercials could prompt and better isolate the predicted effect. The pretest's procedure and analysis are reported in detail in Appendix C.

Participants and Procedure

Thirty-nine students from a large European University (M_{age} = 23, SD = 2.33; 51% male; RSM students) took part in this laboratory experiment in exchange for monetary compensation. Participants watched emotional videos (95-seconds each, approximately) interspersed with 30-second commercials (Appendix B). The emotional videos were previously validated to induce the intended discrete emotions (Eijlers et al. 2019).

We divided the emotional videos into four blocks—each block eliciting the same discrete emotion – interspersed with the commercials (Figure 2). Participants watched one commercial (randomly drawn from our pool of commercials) after each emotional video. The order of emotional videos within each emotional block, the order of the four emotional blocks, and the order of the commercials were all randomized. At the end of each emotional block, participants watched an emotionally neutral video (i.e., documentary) to "reset" participants' emotions after each emotional block (2 minutes, approximately; Figure 2); the order of the neutral videos was also randomized. After watching all emotional videos and commercials, participants completed a 5-minute filler task (the spot-the-difference task from Speer, Smidts, and Boksem 2021), and then they wrote down all the brands that they remembered having seen. Next, all commercials were shown again in random order, and participants rated their attitude toward the ad (7-point bipolar scale: Dislike/Like) and their purchase intentions (two 7-point scale items: "Would you like to try this product/service?" and "Would you actively seek out this product/service?") for all commercials. Finally, participants reported their demographic information and were debriefed.

Results and Discussion

Attitudes toward the ad and purchase intentions. Participants had an overall positive attitude toward commercials (M = 4.71, SD = 0.75) and a moderate intention to purchase (M = 3.40, SD = 0.70). Thus, it is unlikely that a lack of interest and attention could produce any effects on memory since our commercials are of moderate levels of engagement.

Ad memorability. For each of the 20 commercials we coded whether participants mentioned the corresponding brand or another prominent feature of the ad—such as celebrity endorser or a particular product feature mentioned—as a measure of ad memorability (1 = Correct brand or very specific features presented in the commercial; 0 = otherwise). We considered prominent features of the ad as a valid answer because even though we probed participants for ad recall, recalling a specific aspect of the commercial would also indicate that participants remembered the commercial. Given that the commercials were randomized, their prominent features are not confounded with the emotional block.

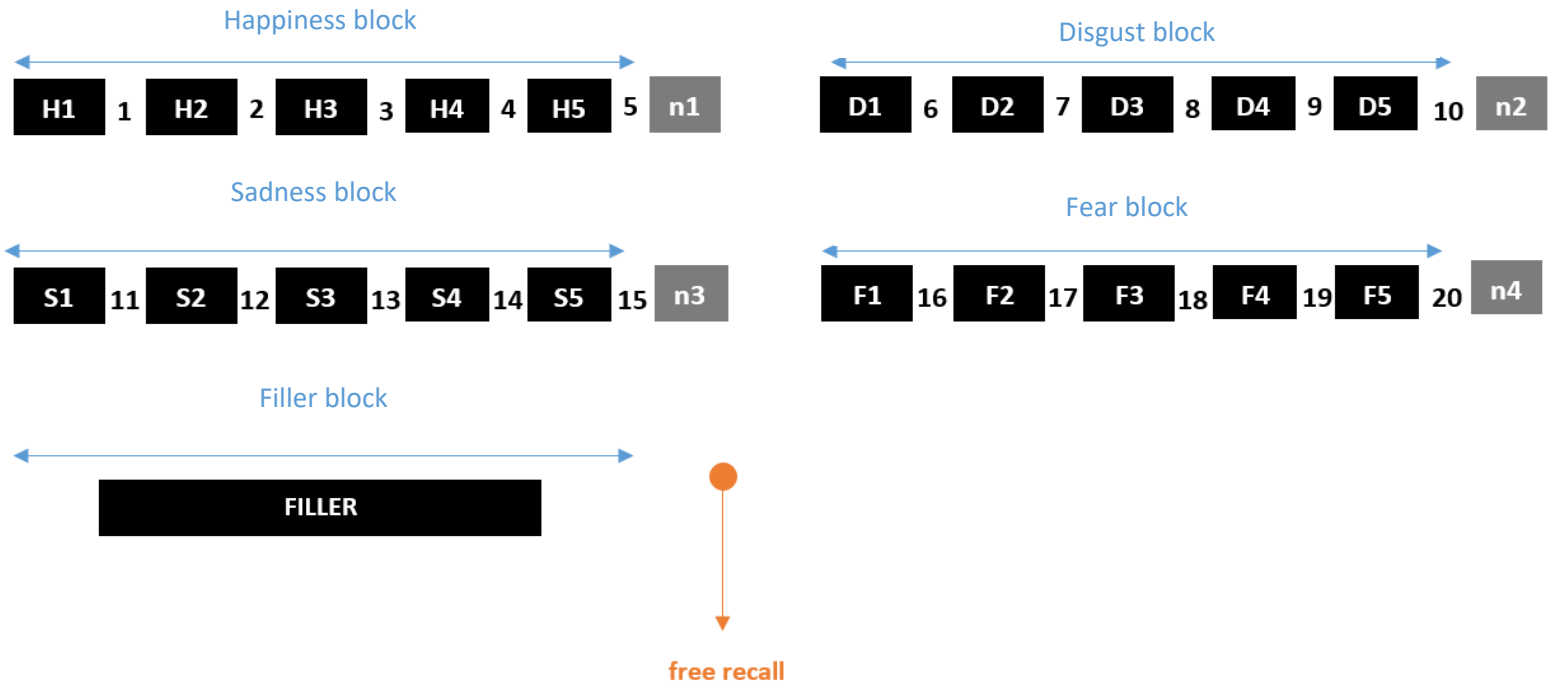

Figure 2. Study 1 design.
All participants saw all the blocks. The order of emotional videos within each emotional block was randomized, as well as the order of the four emotional blocks. Commercials were also randomized across the 20 different positions.
Labels: black boxes are the emotional videos (e.g., D1 = disgust video number 1; F4 = fear video number 4), grey boxes are neutral videos (e.g., n2 = neutral video number 2) and numbers without boxes are commercials.

Results revealed that only 19.3% of the recalled commercials belong to those presented in a disgusting context; it was the contextual emotion with the lowest percentage of recall (fear = 24.6%; sadness = 28.8% and happiness = 27.3%; Table 3). To account for multiple sources of nonindependence (i.e., when multiple data points are collected from the same individual) and given the small sample size, we decided to analyze the data with a generalized linear mixed-effects model (Brauer and Curtin 2018). The analysis was conducted in R (version 4.0.5) using the *lme4* package. We included emotional block as a fixed effect, and controlled for subjects, commercials, and order of the blocks as random effects. Our analysis showed that, compared to disgust, sadness increased the odds of recall by 76% (B = .566, SE = .236; z = 2.399, p = .0164) and happy by 71% (B = .53, SE = .239; z = 2.237, p = .0253). Fearful content also increased the odds of recall by 30% compared to disgust (B = .261, SE = -.239; z = 1.092, p = .275); however, we note that in this case, this difference was not significant (Figure 3). In conclusion, this study provides the first evidence supporting our hypothesis: disgust was the emotional context that provoked the lowest commercials' recall.

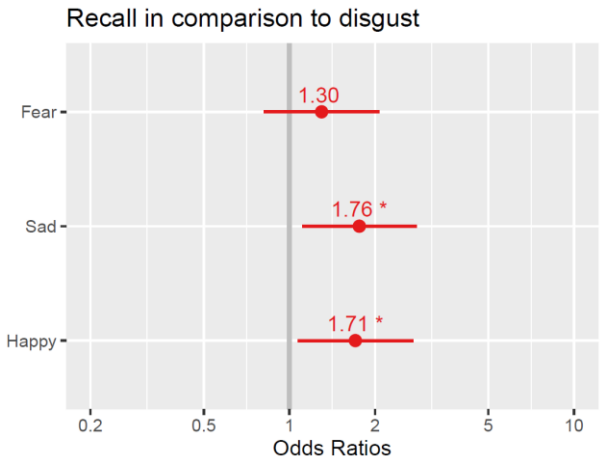

Figure 3. Results of Study 1. This plot indicates that fear, sadness, and happiness produced a higher recall compared to our reference (disgust; highlighted with the solid grey line). An odds ratio > 1 indicates that memory is higher compared to the reference group; an odds ratio < 1 shows that memory is lower compared to the reference group.

TABLE 3.

RESULTS OF STUDY 1: PERCENTAGE OF ADS RECALLED AFTER DIFFERENT EMOTIONAL BLOCKS (DISGUSTING, FEAR-INDUCING, SAD, AND HAPPY EMOTIONAL VIDEOS).

		Not recall	Recall	Total
Disgust	% within disgust block	73.8%	26.2%	100%
	% within responses	27.9%	19.3%	25.0%
	% within total responses	18.5%	6.5%	25.0%
Fear	% within fear block	66.7%	33.3%	100%
	% within responses	25.2%	24.6%	25.0%
	% within total responses	16.7%	8.3%	25.0%
Sadness	% within sad block	61.0%	39.0%	100%
	% within responses	23.1%	28.8%	25.0%
	% within total responses	15.3%	9.7%	25.0%
Happiness	% within happy block	63.1%	36.9%	100%
	% within responses	23.8%	27.3%	25.0%
	% within total responses	15.8%	9.2%	25.0%

Note: In Table 3 each emotional context is composed of three different rows: % within emotion block, which compares recall (not recall) responses of a particular condition; % within responses, which compares recall (not recall) responses of a particular condition with recall (not recall) of all emotional conditions; % within total responses, which compares recall (not recall) responses of a particular condition with all responses given.

STUDY 2

The goal of this study was to test if the previously observed effect could be replicated with a larger sample and without the possibility of emotional spillovers (i.e., a plausible concern of within-subjects design). Since Study 1 showed an overall low percentage of recalled commercials (the protocol was 1h:30min long), we shortened the protocol length and the number of commercials; by reducing task difficulty, we could prevent any floor effect. This study also eliminates the possibility of spillovers between emotional contexts (i.e., the experience of several emotional blocks could also play a role); since participants experience only one emotion (between-subjects design), the induction of different emotional contexts cannot explain memory outcomes.

We used the same previously validated emotional videos as in Study 1 (Appendix B). and the same pool of neutral commercials from Study 1. Since this study utilized only five commercials, we used the pretest to select the five with the lowest emotional weight (Appendix C).

Participants and Procedure

One hundred and forty-nine students from a large European university (M_{age} = 24, SD = 1.77; 43% male; Nova SBE students) were recruited in exchange for course credits. Participants were randomly allocated to one type of emotional video (happy, sad, fear-inducing, or disgusting; see Appendix B for details on the stimuli); they watched five emotional videos for each emotion (previously validated by Eijlers et al. 2019) interspersed with five commercials. As in Study 1, participants watched a commercial after each emotional video. Both the order of emotional videos and the order of commercials were randomized within the block (Figure 4). At the end of the

emotional block, participants watched an emotionally neutral video for approximately 2 minutes and completed a 5-minute filler task (spot-the-difference task from Speer et al. 2021). Next, participants wrote down all the brands that they remembered having seen. Finally, participants rated their attitude toward the ad (7-point bipolar scale: Dislike/Like) and their purchase intention (two 7-point scale items: "Would you like to try this product/service?" and "Would you actively seek out this product/service?") for all commercials.

Results and Discussion

Attitudes toward the ad and purchase intentions. Participants had an overall positive attitude toward the commercials (M = 4.54, SD = 0.91) and a moderate intention to purchase (M = 3.68, SD = 1.0); their general evaluations on the commercials made it unlikely that they divert their attention to the commercial due to a lack of interest (replicating results from Study 1).

Ad memorability. Our dependent variable was ad memorability as in Study 1 (same coding scheme used).

TABLE 4.

RESULTS OF STUDY 2: PERCENTAGE OF ADS RECALLED AFTER DIFFERENT EMOTIONAL BLOCKS (DISGUSTING, FEAR-INDUCING, SAD, OR HAPPY EMOTIONAL VIDEOS).

		Not recall	Recall	Total
Disgust	% within disgust block	38.9%	61.1%	100%
Fear	% within fear block	26.7%	73.3%	100%
Sad	% within sad block	23.8%	76.2%	100%
Happy	% within happy block	31.4%	68.6%	100%

Results revealed that disgust was again the contextual emotion with the lowest recall percentage, followed by happiness, fear, and sadness with the highest (Table 4). We ran a generalized linear mixed-effects model to account for multiple sources of nonindependence (such as memory effects driven by the ad). The analysis was conducted in R (version 4.0.5) using the *lme4* package. We included emotional block as a fixed effect and advertisements as a random effect.

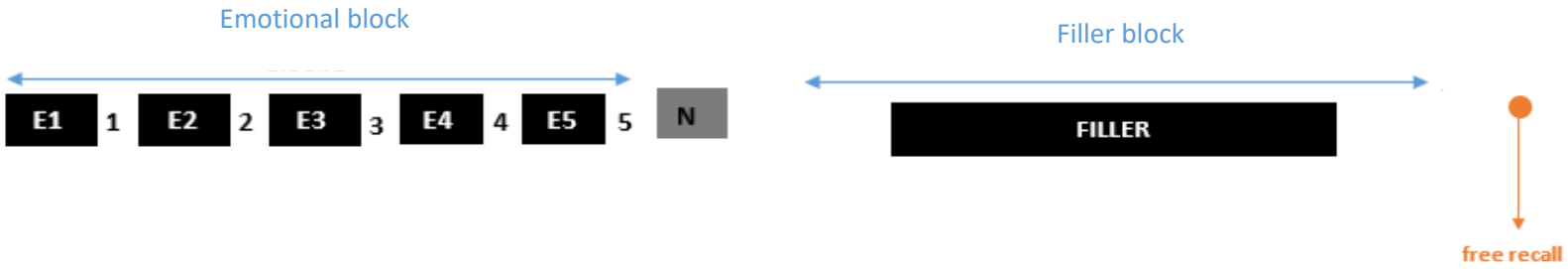

Figure 4. Study 2 design.
Each participant only saw videos eliciting one emotion in the emotional block (happy, sad, fear or disgut-inducing). The order of emotional videos and the commercials was randomized within the emotional block.
Labels: black boxes are the emotional videos (e.g., E1 = emotional video number 1), grey boxes are neutral videos and numbers without boxes are commercials.

Our analyses showed that, as compared to disgust, sadness increased the odds of recall by 106% (B = .735, SE = .226; z = 3.246, p = .00117) and fear by 78% (B = 0.579, SE = 0.231; z = 2.503, p = .0123). Differences between disgust and happiness also showed the expected pattern; happiness increased the odds of recall by 41%, but the effect was not significant (B = .340, SE = .227; z = 1.497, p = .1345) (Figure 5).

Again, results supported our hypothesis; disgust (vs. happy/sad/fear) was the emotional context that reduced commercial memorability the most. The percentage of recalled brands was higher than 50% in all the emotional contexts because participants had to recall only five commercials (and not 20, as in Study 1). In this study, we increased the sample size and reduced the duration of the procedure to preclude floor effects. More importantly, we observed the same pattern by inducing only one emotion; thus, triggering four consecutive emotions is an unlikely confounder in Study 1.

These changes in the procedure produced stronger effects compared to Study 1. Of note, in this study, the difference between fear and disgust is significant. However, although in the expected direction, we do not find significant effects between disgust and happiness. Nevertheless, the pattern is similar to that in Study 1: disgust reduces ad recall compared to happiness.

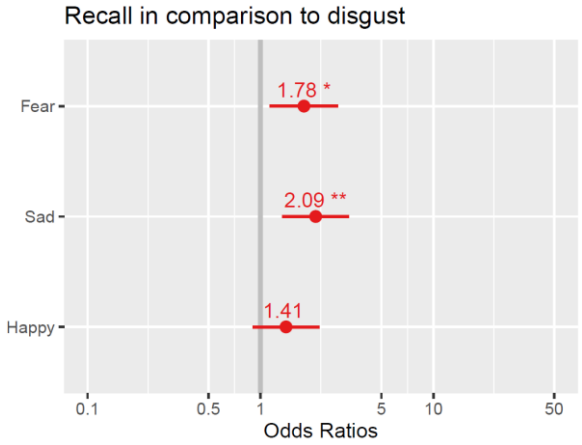

Figure 5. Results of Study 2. This plot indicates that fear, sadness, and happiness produced a higher recall compared to our reference (disgust; highlighted with the solid grey line). An odds ratio > 1 indicates that memory is higher compared to the reference group; an odds ratio < 1 shows that memory is lower compared to the reference group.

STUDY 3

Overall, Studies 1 and 2 provide evidence that disgusting contexts consistently hampers commercials' recall compared to other emotional contexts. We hypothesize that this effect is driven by a phenomenon specific to disgust; in particular, disgusting content is hypothesized to produce a long-lasting effect on consumers' minds that hampers the adequate processing and encoding of a subsequent commercial. In contrast, previous literature suggests that the influence of contextual emotions on memory for subsequent stimuli can be explained by arousal of the emotional stimuli (Pavelchak, Antil, and Munch 1988; Hurlemann et al. 2005). Thus, a plausible alternative explanation would be that the disgusting videos elicited higher arousal than the other emotional stimuli. The purpose of Study 3 is to rule out this alternative mechanism by evaluating arousal levels of the emotional videos.

Participants and Procedure

Two hundred and fifteen participants (M_{age} = 29, SD = 6.88; 47% male; Prolific) were recruited online in exchange for a small monetary compensation. First, participants watched an unrelated 20-second video with a short voice-over (i.e., an emotionally neutral video about nature from National Geographic). Then they answered the following questions as an attention check: "Which animals did you see in the video?" and "What did you hear in the video audio?". Participants had four possible choices for each question and had to select the two correct ones.

Next, participants randomly watched four emotional videos, one for each emotion: happiness, sadness, fear, and disgust. Each video was randomly drawn from our pool of emotional videos used in Studies 1 and 2. Following each video, participants self-reported their level of arousal (three 7-point bipolar scale items: relaxed/stimulated; calm/excited; sleepy/wide-awake) and completed a valence scale (four 7-point bipolar scale items: unhappy/happy; unsatisfied/satisfied; despaired/hopeful; not joyful/joyful; adapted from Russell 1980; Holbrook et al. 1984).

Results and Discussion

We excluded 15 participants who failed at least one of the attention-check questions. A repeated measures ANOVA showed a statistically significant difference in arousal between the four emotions ($F(2.510, 499.579) = 71.179$, $p < .001$). In particular, fear-inducing videos (M_{fear} = 5.67, SD = 1.07) were the most arousing ($M_{disgust}$ = 5.03, SD = 1.13; M_{happy} = 4.04, SD = 1.57 and M_{sad} = 4.33, SD = 1.30). Multiple paired t-tests with Bonferroni correction showed significant differences between fear and disgust ($p < .001$). Arousal differences were also significant for

happiness-fear ($p < .001$); happiness-disgust ($p < .001$); sadness-fear ($p < .001$); and sadness-disgust ($p < .001$). Only happiness-sadness did not show significant results in arousal ($p = 0.327$).

In terms of valence, happy videos were the only ones eliciting positive valence (above 4, middle scale point), as expected ($M_{happy} = 5.58$, $SD = 1.26$). Multiple paired t-tests with Bonferroni correction showed that happy videos had a valence score statistically different from all the other emotions ($M_{sad} = 2.58$, $SD = 1.06$; $M_{fear} = 3.00$, $SD = 1.20$ and $M_{disgust} = 2.80$, $SD=1.39$; $F(2.752, 547.620) = 285.487$, $p < .001$). Pairwise comparisons for valence showed that most emotions were different from each other: happy-sad ($p < .001$), happy-fear ($p < .001$), happy-disgust ($p < .002$); sad-fear ($p < .001$); except for disgust-sad ($p = .347$) and disgust-fear ($p = .350$).

Since fear was experienced as more arousing than disgust, these results indicated that differences in arousal alone could not explain the reduced recall for disgust-inducing stimuli that we have observed. Some authors have proposed that more arousing emotional contexts decrease recall for subsequent stimuli (Pavelchak, Antil, and Munch 1988). However, if that were the case, fearful videos should have led to the lowest memory recall, as they show the highest arousal (not disgusting videos).

Also, positive valence cannot explain our memory effects of disgust, as previously stated (Goldberg and Gorn 1987; see also contrasting findings from Pavelchak, Antil, and Munch 1988); if that were the case, we would have observed a higher recall for happiness compared to the other emotional contexts – which is clearly not what we see. Overall, these findings corroborate the idea that the effect of disgust on a subsequent stimulus goes beyond its arousal and valence.

Contrary to previous research employing valence or arousal to categorize emotions, employing discrete emotions allows us to observe psychological phenomena specific to each. Thus, this research adds detail to our knowledge on the effect of emotions on memory.

GENERAL DISCUSSION

Our work consistently shows that disgusting contexts (such as those elicited by movie scenes or TV programs) reduce recall of subsequent commercials compared to other emotional contexts. We observe this effect with two different methodologies: a within-subjects design, which accounts for individual differences in memory (Study 1), and a between-subjects design that allows a more direct test of effects specific to each emotion (i.e., only one emotion is elicited, Study 2). In Study 3 we rule out arousal-valence dimensions as possible explanations for the effect.

We theorize that disgust decreases commercials' memorability because consumers continue to process disgusting scenes after the emotional stimulus disappears—this mental process overlaps with the encoding of a commercial, reducing its recall. Our proposed mechanism is in line with previous research suggesting that extensive processing of a disgust stimulus can be beneficial and necessary to identify if a substance may be consumed or if it is a source of danger in future encounters (Carretié et al. 2011; Knowles et al. 2019; Perone et al. 2021). Indeed, this sustained processing is required given the low sensory information obtained during the exposure (Susskind et al. 2008). In contrast, a sustained exploration of sadness- or fearful-inducing stimuli imposes a biological cost; prolonged processing of sad stimuli triggers rumination, which is known to be detrimental to health (Aldao et al. 2010; Nolen-Hoeksema 2000),

and sustained exploration of fearful stimuli is not required, and could even pose imminent bodily harm given that this emotion requires an immediate response (e.g., keep thinking about the snake you just saw can prevent you from running away and impair a defensive reaction; bringing more costs than benefits; Woody and Teachman 2000; Armstrong, Thomas and Olatunji 2012). Similarly, happiness is also not tuned to extend monitorization because the role of positive emotions is to prepare individuals for future occurrences by increasing exploration of new information (Fredrickson 2001) and not by exploring the reasons that caused happiness (i.e., this sustained exploration can even be detrimental and reduce happiness; Schooler and Mauss 2010; Wegner 1994). Consequently, it is unlikely that happiness decreases recall for subsequent information. This prediction is in line with prior research showing that happiness broadens recall for subsequent events (Levine and Burgess 1997) and increases memory for peripheral information (spatially and temporally; Talarico, Berntsen, and Rubin 2009; Wang and Ren 2020; Fredrickson and Branigan 2005).

The most interesting comparison is between fear and disgust because both are negative and highly arousing emotions. Despite their apparent similarity, these emotions have distinct functional roles, which alter the way they are processed and evaluated. In particular, we propose that they produce different carry-over effects. Corroborating our research, previous studies report that disgust and fear produce different behavioral (e.g., they elicit different amounts of sensory exposure; Susskind et al. 2008) and cognitive processes (e.g., different memorability levels; Chapman et al. 2013; Ferré, Haro, and Hinojosa 2018).

Prior research has proposed two theories to explain memory for emotional-inducing stimuli. On the one hand, it can be explained through arousal-dependent

mechanisms, relying on the consolidation phase to produce its effects (McGaugh 2000; Talmi 2013). On the other hand, memory advantages for emotional stimuli can also be explained by immediate cognitive processes that occur during the encoding phase, such as the distinctiveness of the emotional stimulus compared to collateral information (Talmi 2013; S. Hamann 2001; Christianson 1992). Our work informs the latter theory (encoding-driven) by proposing that memory improvements for disgust occur via a cognitive process during and immediately after the encoding, not through an arousal-based mechanism. Another reason that supports an encoding process is the duration of our filler; our filler task lasted only five minutes, which is too short for the consolidation to evolve (Guyton and Hall 2005). Moreover, we show an important consequence of this enhanced memory for disgust – a reduced recall for subsequent events (such as a commercial) – which is especially important for an advertising context.

Alternative mechanisms

According to previous literature, more arousing contextual emotions decrease advertising recall (Pavelchak, Antil, and Munch 1988). However, in this work we ruled out arousal as the primary explanatory mechanism for the effect of contextual disgust on advertising memorability. Our results showed that the videos used to induce disgust were not particularly arousing compared to the other emotional stimuli used in our studies. For instance, the fearful videos used were more arousing than the disgusting stimuli. Consequently, arousal alone is an unlikely explanation for the detrimental effects of disgust on commercials' recall.

A second (and alternative) explanation could be related to the avoidance nature of disgust. It is known that avoidance is a strong characteristic of disgust (Shook, Thomas, and Ford 2019) and it could be possible that individuals seek to avoid the disgusting stimulus and, by doing so, they also avoid subsequent stimulus (i.e., commercial). For example, research has shown that after feeling disgust, participants trade away an item they are presently possessing (such as a box of unidentified office supplies) which shows a carry-over effect of withdrawing (Han, Lerner, and Zeckhauser 2012).

We may not deny the presence of avoidance tendencies, but we argue that our mechanism explains the observed cognitive process to a greater extent. First, previous research found that fear and disgust are equally related to avoidance (Croucher et al. 2012); however, we observe that between these two emotions, disgust, not fear, is the one that leads to less recall. Second, disgust is characterized by a strong avoidance tendency but also by a strong memorability for disgusting stimuli; thus, avoidance does not lead directly to a recall reduction of the disgust-inducing stimulus. More importantly, it is plausible to propose that individuals activate avoidance tendencies because of their prolonged processing of disgust stimuli; however, it is unlikely that individuals avoid a neutral stimulus (commercial) without the presence of any mental representation of disgust. Thus, we believe that avoidance tendencies cannot exclude our proposed explanation; indeed, we argue that our mechanism better explains a decreased memory for subsequent events because the proposed carry-over effect happens regardless of the existence of a withdrawal tendency. In contrast, the presence of an avoidance tendency is hard to explain without considering a carry-over effect of the emotion (keeping a mental representation of the disgust-inducing stimulus).

Theoretical and Practical Contributions

Our work supports the notion that researchers should not rely entirely on a valence-arousal dimension to study the consequences of emotional contexts on memory. Doing this may undermine our knowledge of potential mechanisms that are emotion-specific and that might help explain the impact of contextual emotions on the memory of subsequent events. Moreover, we respond to a call to action on how incidental emotions influence consumer behavior in an advertising context (Poels and Dewitte 2019). Literature on decision-making has already demonstrated that incidental/contextual discrete emotions could carry over and influence unrelated judgments or decisions (Lerner et al. 2015). The current study expands this research by showing that long-lasting effects on emotional contexts can also alter memory-related cognitive processes.

Our findings also offer useful insights for marketers. We found that marketers should avoid programs or movies that elicit disgust; this emotion is too attentionally demanding and may distract viewers from processing commercials (particularly the first commercial presented after the context). Even though disgusting programs and movies can have huge commercial success (such as *Fear-Factor* or *Hoarders*), they are the least effective at improving recall of subsequent commercials. Instead, sadness seems to be the emotional context that increases commercials' recall the most. Thus, it seems beneficial to place commercials in the interval of a heart-breaking movie or after a sorrowful TV program.

We also provide recommendations for media agencies; standard practices use the size of the audience to define the price of TV advertising; however, this approach might be too simplistic. For instance, we can have a program with a large audience but,

because it elicits disgust, it may not be effective—it will reduce ad recall. Consequently, media agencies might consider new pricing strategies that take into account the emotional context in which the advertising will be placed. This refined approach would match the real ad performance more closely, and consequently, represent a better strategy for brand clients.

Future work could explore the duration of the carry-over effect; we observed that the emotional context changes the recall of the first commercial presented after the context. But is this effect restricted to the first commercial, or does it also affect subsequent commercials? Previous research shows that emotional brain states can persist for hours and change the encoding of new information (Tambini et al. 2017); thus, it might be plausible to propose that memory for the other commercials is also impacted.

Additionally, it would be interesting to study the influence of social presence as a moderator for this effect. Few studies have explored how the presence of others alters the processing of advertising stimuli (Pozharliev, Verbeke, and Bagozzi 2017). Indeed, it is possible that the experience of emotional contexts changes in a social context.

APPENDIX A.

Memory effects of discrete emotions

Author	Findings	Emotions studied	Type of outcome
Levine and Burgess 1997	Happiness led to a broader recall of subsequent narratives, whereas anger and sadness induced a more targeted recall of those narratives (i.e., recall of information that is focused on goals and outcomes). Emotional arousal could not explain recall for different types of information.	Happy vs. Anger/Sad	Recall of information that follows emotional content
Talarico, Berntsen, and Rubin 2009	Angry (vs. fearful) memories had fewer peripheral details. Happy (vs. positively surprising) memories had fewer peripheral details. This phenomenon occurred despite the valence and arousal similarities of the emotions.	Angry vs. Fear Happy vs. Surprise+	Recall of information within the emotional content
Chapman et al. 2013; Ferré, Haro, and Hinojosa 2018	Disgusting stimuli (words and photographs) had a higher recall and recognition than fearful and neutral images. Neither valence nor arousal could explain disgust memory advantage.	Disgust vs. Fear/Neutral	Recall of information within the emotional content
Lench and Levine 2005	Priming fear reduces recall of subsequent information as compared to happy, angry, and neutral	Fear vs. Angry/Happy/Neutral	Recall of information that follows emotional content
Threadgill and Gable 2019	Threat (vs. sadness) reduced memory for words presented in one corner of the screen (peripheral information) and enhanced memory for words presented in the center of the screen (central information).	Sad vs. Threat	Recall of information within the emotional content
Croucher et al. 2012	Disgusting images were more remembered than frightening and positive images. Emotional arousal could not explain the effect.	Disgust vs. Threat/ Positive	Recall of information within the emotional content
Wang and Ren 2020	Happy (vs. anger/disgust) increased memory for information that appears before an emotional event.	Happy vs. Anger/Disgust	Recall of information that precedes emotional content

APPENDIX B.

Details of the stimuli used in Studies 1 and 2

Content	Source	Study	Length (s)
Disgust	Pitch Perfect	1 and 2	21
Disgust	Mr. Creostote	1 and 2	50
Disgust	Trainspotting	1 and 2	62
Disgust	BuzzFeed Food	1 and 2	75
Disgust	Fear Factor	1 and 2	79
Fear	Anaconda	1 and 2	43
Fear	Annabelle	1 and 2	55
Fear	The Ring	1 and 2	93
Fear	Friday the 13th - Part 2	1 and 2	96
Fear	Maze Runner - The Scorch Trials	1 and 2	123
Happy	Love Actually	1 and 2	52
Happy	About Time	1 and 2	88
Happy	The Holiday	1 and 2	109
Happy	500 Days of Summer	1 and 2	111
Happy	Up	1 and 2	261
Sad	The Help	1 and 2	106
Sad	The NeverEnding Story	1 and 2	107
Sad	The Champ	1 and 2	110
Sad	Marley & Me	1 and 2	132
Sad	The Green Mile	1 and 2	134
Neutral	Modern Masters - Andy Warhol	1 and 2	99
Neutral	The archers of Butan	1 and 2	105
Neutral	China’s high-speed train	1 and 2	106
Neutral	Wild Namibia	1 and 2	112
Commercial	Zara	1 and 2	26
Commercial	Hellmann’s	1	30
Commercial	Absolut	1	30
Commercial	Calvin Klein	1	30
Commercial	Dropbox	1	30
Commercial	Lee	1	30
Commercial	Maltesers	1	30
Commercial	Marshall	1	30
Commercial	New Balance	1 and 2	30
Commercial	Oreo	1	30
Commercial	Vodafone	1	30
Commercial	World of Warcraft	1	30
Commercial	Intel	1	31

Commercial	Colgate	1 and 2	31
Commercial	Amazon	1	32
Commercial	Elvive	1 and 2	32
Commercial	Dove	1	33
Commercial	Bic	1	35
Commercial	Primark	1 and 2	35
Commercial	Pepe Jeans	1	36

APPENDIX C.

Pretest to select neutral commercial

This pretest intended to select neutral commercials to be used in Studies 1 and 2. In these studies we sought to assess the influence of emotional contexts on subsequent commercials, and it was therefore important to have commercials with a neutral emotional weight to isolate the effect of the emotional contextual video and eliminate a possible confounding effect of the commercials' emotionality.

We started by selecting 36 emotionally neutral commercials of different brands from a large advertising archive, *Ads of the World*. We selected 30-second ads in English that advertised consumer products of general public interest from relatively known brands, released between 2010-2020. We excluded blockbuster ads because of their extreme popularity and instead selected advertisements with a low number of views. In this way we could prevent memory scores driven by previous commercial exposures and not by our own experiment. This pretest aimed to identify 20 neutral commercials from these 36 commercials gathered by the authors.

Participants and procedure

Forty participants (M_{age} =22.68, SD =1.23; 67.5% male; students from a large European University) watched 36 commercials in a laboratory setting and rated the extent to which they experienced each emotion (happiness, sadness, fear, disgust) during the commercial (1 = Very little; 7 = Very much). They also reported the extent to which the brand was important to them (1 = Very little; 7 = Very much), the extent to which the brand was familiar to them (1 = Very little; 7 = Very much), their purchase

intentions (two 7-point scale items: “Would you like to try this product/service?” and “Would you actively seek out this product/service?”) and whether they had seen the commercial before (Yes/No).

Results and Discussion

In Appendix D we describe all the commercials used: the brand, the product category, the emotionality scores, and brand-related scores.

Prior exposure to commercial. We excluded ads that had been seen by more than 10% of our sample (i.e., a maximum of four participants could have seen the ad) because we wished to select commercials that most people had not seen. Thus, the selected commercials were relatively unknown, as intended—our goal was to avoid prior commercial knowledge to be the main driver of recall in our main study, obfuscating memory effects driven by our manipulation of emotional contexts.

Brand relevance, familiarity, and purchase intention. The brands portrayed in each commercial were relevant to consumers, as indicated by subjective importance scores significantly higher than 4—the middle point of the scale ($M = 4.78$, $SD = 0.82$; $t(19) = 4.26$, $p < .001$; Appendix D). Since these commercials are above a moderate level of importance, we ensure that participants will pay minimum attention to them; this is useful to prevent floor effects or any lack of processing resulting from the commercial itself. Moreover, brand familiarity did not differ from the mid-point scale (=4) indicating that participants were moderately familiar with the brand ($M = 3.77$, $SD = 0.74$; $t(19) = -1.420$, $p = .172$; Appendix D). This is important because we wanted to avoid extremely familiar brands and unknown brands, as both conditions can impact our main dependent variable (ad recall). Lastly, participants showed a moderate intention to

purchase (M = 3.33, SD = 0.64) significantly lower 4—the middle point of the scale ($t(19) = -4.66$, $p < .001$; Appendix D). Even though we were expecting higher purchase intentions, it is unlikely to produce a low interest for the commercials since they generate sufficient levels of engagement in terms of importance scores and familiarity.

Emotion neutrality. The individual scores for each emotion were significantly lower than 4 (mid-point scale indicating moderate emotional levels) ($M_{sad} = 1.36$, SD = .17, $t(19) = -68.28$, $p < .001$; $M_{fear} = 1.34$, SD = .24, $t(19) = -50.46$, $p < .001$; $M_{happy} = 3.7$, SD = 0.69, $t(19) = -1.94$, $p = .067$; $M_{disgust} = 1.3$, SD = 0.21, $t(19) = -56.11$, $p < .001$). We computed an overall emotionality index by summing up the four different emotional scores (happy, sad, fear, disgust) and chose the 20 commercials with the lowest emotionality score. The purpose was to select commercials with the same low emotional weight so that their emotionality does not interfere with the emotional context. In this way we prevent the emotionality of the ad from interacting with mental processes triggered by antecedent emotional contexts (Faseur and Geuens 2006; Goldberg and Gorn 1987).

APPENDIX D.

Commercials selected in the pretest (used in Studies 1 and 2)

product category	brand	nr. of participants who saw the commercial	emotionality*	purchase intention	familiarity	importance
shoes	New Balance	2	6.5	3.2	3.9	5.1
clothes	Zara	1	7	3.6	5	5.8
personal care	Elvive	0	7.1	2.55	3.2	4.5
clothes	Primark	0	7.3	2.6	3.4	4.9
personal care	Colgate	2	7.4	3.8	3.7	4.1
technology	Marshall	2	7.4	3.9	4.6	5.7
technology	Vodafone	3	7.5	2.75	3.5	4.9
food	Absolut	0	7.5	2.6	3.1	3.9
personal care	Dove	0	7.5	3.4	4.1	5.5
personal care	Bic	0	7.6	3.35	3.9	5
clothes	Calvin Klein	4	7.9	3.6	4.4	5.3
technology	Dropbox	0	7.9	4.35	4.8	5.5
clothes	Pepe Jeans	3	8	2.7	2.6	3.4
clothes	Lee	1	8	2.75	2.8	3.2
technology	Intel	2	8.1	3.75	4.2	5.2
food	Maltesers	1	8.1	3.1	3.6	4.9
food	Hellmanns	2	8.2	3.8	3.4	3.9
food	Oreo	1	8.2	4.6	4.8	6.1
technology	Amazon	1	8.2	3.85	3.9	4.9
technology	World Of Warcraft	1	8.2	2.35	2.4	3.8

**Emotionality: Sum of the scores of the emotions elicited in the ad (happy, sad, fear, disgust). Each emotion was evaluated on a 7-point intensity scale.*

Chapter 5

Conclusion

The empirical part of my dissertation is composed of three chapters that examine different factors able to influence advertising performance. In Chapters 2 and 3 I am focused on the advertising creation phase, where I study how ad creatives' brand attitudes change the type of advertisement they produce and their ability to forecast consumers' liking for their work. In Chapter 4 I shift to the dissemination phase of advertising by exploring how discrete contextual emotions—triggered by programs or movies—influence advertising recall. This final chapter reviews the main findings of the prior chapters and highlights theoretical and practical contributions.

Chapter 2 insights

Several factors influence the production of marketing materials, such as creative managers' leadership style (Mallia, Windels, and Broyles 2013), the level of cooperation between client and agency (Calderwood et al. 2021), agencies' strategy (Koslow, Sasser, and Riordan 2006), among others. Research on the impact of the relationship between the ad creative and the brand is very limited and based on qualitative studies (Kover 1995; Phillips et al. 2014).

Given that advertising creatives are consumers themselves, I have proposed that creatives' brand attitudes affect the type of advertisements they produce for a brand. Specifically, creatives who have negative brand attitudes are more likely to produce functional advertisements appealing to rationality, and less likely to produce emotional

ads appealing to emotions. I argued that this happens because individuals who dislike a brand believe that their attitudes can have a negative impact on their work; thus, they try to correct for their perceived bias by staying rational and suppressing their emotions. This, in turn, inadvertently spills over into their creative output.

In Study 1, 201 participants wrote a TV commercial for either their most liked or most disliked fast-food restaurant brand. In this and all other studies from this chapter, scripts were coded as to whether they contain a strong functional appeal and a strong emotional appeal by independent coders (Studies 1-2) or the author (Study 4). Results revealed that participants who worked for a disliked brand were less likely to produce an emotional ad and more likely to produce a functional ad compared to participants who worked for a liked brand. Given the practical importance of my research question, I investigated it in a more consequential sample in Study 2.

In Study 2, 98 professional advertising creatives from 18 advertising agencies wrote a TV commercial script for their most liked and disliked brand in counterbalanced order. I found that brand disliking significantly decreased the likelihood of including emotional appeals and significantly increased the likelihood of including functional appeals in their commercials.

Study 3 aimed to give the first evidence in line with my proposed mechanism – the existence of a perceived bias and the need to overcome it. Two hundred and eight participants imagined producing a script for a brand they liked or disliked. Participants who imagined working for a brand they disliked (vs. liked) were more likely to believe that their attitudes would have a negative impact on their work rather than positive or no effect. Moreover, participants who disliked (vs. liked) the brand rated staying rational and suppressing emotions as more important strategies to produce a good commercial

and expressing emotions as less important. Both results were in line with our proposed mechanism—an attempt to overcome their perceived bias.

Finally, in Study 4 I addressed the alternative explanation that emotions are driving the effect. One hundred and ninety participants were randomly assigned to a positive, neutral, or negative brand attitudes condition (between subjects). In each condition, participants read a fictitious brand description inducing the intended brand attitudes and wrote a TV commercial for this brand. Negative brand attitudes reduced the likelihood of creating an emotional ad compared to positive and neutral brand attitudes. The likelihood of producing an emotional ad was similar between the positive and neutral brand attitudes conditions. Moreover, negative brand attitudes increased the likelihood of creating a functional ad compared to positive brand attitudes and neutral brand attitudes. Participants in the positive and neutral brand attitudes conditions were equally likely to write a functional ad. This pattern is inconsistent with the alternative explanation, which is that the presence of positive emotions leads to more emotional content in the scripts. Indeed, creatives with positive brand attitudes did not include more emotional content in their ad than participants with neutral attitudes. These results are more consistent with my proposed mechanism—only negative brand attitudes lead to perceptions of lower performance that they seek to overcome. Importantly, this study also rules out another alternative explanation claiming that the presence of negative emotions in the brand disliking condition triggers more rational thinking by itself, resulting in less emotional content. Results showed that negative affect during the task was no different between conditions; thus, this is an unlikely explanation.

From a theoretical standpoint, I contribute to the advertising literature because I am the first to demonstrate how creatives' brand attitudes affect the type of

advertisement that creatives produce. I also inform creativity literature by proposing novel psychological processes involved in projects that creatives dislike and their consequences for the creative output. From a practical standpoint, this research challenges the intuitive idea that creatives' negative brand attitudes might affect ad performance negatively (Kover 1995; Phillips, McQuarrie, and Griffin 2014). In fact, choosing a creative who dislikes the brand can be beneficial in situations in which functional ads outperform emotional ads (Chandy, et. al. 2001; Guitart and Stremersch 2021).

Chapter 3 insights

Advertising creatives need to predict the potential success of their ideas to select the best ones (e.g., their best commercial script) to present to managers or clients – their professional success depends on it. However, there is often a disconnect between ad creatives' evaluations of their work and others' evaluations (Kover, James, and Sonner 1997); indeed, this gap may even cause brands to underperform in the market (Kornish and Ulrich 2014; Luffarelli et al. 2018; Modig and Dahlen 2020). Prior research suggests that creatives overestimate how consumers will value their ideas (Berg 2016)—a pervasive forecasting error across different professions (Dunning et al. 2004; Loftus and Wagenaar and 1988; Oskamp 1965). Importantly, research suggests that individuals are not able to correct this bias without external input (such as interventions or market research data).

In this chapter I challenged this idea by demonstrating that ad creatives can spontaneously and intrinsically correct their own bias. I proposed that creatives accurately predict the extent to which consumers will like their work when they produce

work for a disliked (vs. liked brand). I argued that creatives with positive brand attitudes fall into the forecasting overestimation because they are motivated to see themselves and their work in a positive tone—a general tendency across all individuals (Alicke and Sedikides 2009; Boiney et al. 1997). Instead, creatives with negative brand attitudes engage in conflicting thoughts: they are motivated to evaluate their work positively (as anyone else), and at the same time believe that their negative brand attitudes might impact their work negatively. These conflicting thoughts will trigger more rational thinking processes, resulting in a more objective and accurate performance forecast. Our Study 3 from Chapter 2 supports our predictions for this chapter since we observe that those who disliked (vs. liked) a brand believe their work to be more negatively impacted by their brand attitudes.

In Study 1, 93 participants rated the extent to which they liked McDonald's and produced a short slogan for that brand. Then they predicted how much other consumers would like their slogan. In a subsequent study, 137 consumers rated how much they liked the produced commercials. I assessed participants' forecasting accuracy by subtracting the actual score of consumers liking from slogan participants' predictions of consumers' liking (Berg 2016). By transforming the data into a categorical variable, we observed that brand attitudes lower than three (negative brand attitudes) do not differ from zero, which means accurate predictions, whereas brand attitudes higher than five (positive brand attitudes) are higher than zero, revealing overestimation. This pattern corroborates my hypothesis; individuals who disliked the brand produced more accurate predictions of consumers' liking than those who liked the brand.

In Study 2 I tested the effect in a sample of professional advertising creatives with a different methodology—an experimental study. Ninety-eight professional

advertising creatives from 18 advertising agencies picked their most liked and most disliked brand and wrote a TV commercial for both brands. After completing the task they rated the extent to which consumers would like their work. In a subsequent study 444 consumers rated the extent to which they liked the produced commercials. Results showed that negative brand attitudes (vs. positive brand attitudes) led to more accurate predictions of consumers' liking; indeed, inaccuracy for those who disliked the brand did not differ from zero, contrarily to the inaccuracy score of those who liked the brand—who overestimated.

This chapter offers theoretical contributions to the managerial biases that exist in marketing by suggesting an alternative spontaneous way to optimize performance forecasts of ad creatives. Moreover, I am the first to show that employees' attitudes toward the project can predict their forecasting accuracy. This work also contributes to decision-making literature by showing that intrinsic factors could result in unbiased predictions without the need for external interventions (e.g., nudges or training sessions) that are usually costly or demanding for the organization.

Chapter 4 insights

Advertising is often incorporated in media contexts such as TV programs, YouTube videos, and movies. These contexts elicit very different emotions that might affect the advertising processing. Previous research has focused on the impact of discrete contextual emotions on several ad performance metrics (such as purchase intentions or persuasiveness). However, it is still unexplored how specific emotional contents affect the recall of subsequent events/commercials. In this chapter I explored

the effect of four emotional contexts (happiness, sadness, fear, and disgust) on the recall of subsequent commercials. I proposed that disgust is particularly harmful to ad memorability compared to other discrete emotions.

Disgusting stimuli (e.g., the smelling of spoiled food) need to be remembered to produce their effect in future occurrences by avoiding contaminations—its function depends on memory (Carretié et al. 2011; Knowles et al. 2019). Indeed, disgusting content was seen to be more memorable than other emotions (Chapman et al. 2013; Ferré et al. 2018). I propose that this memory salience is related to prolonged disgust processing; in particular, I theorize that disgust-inducing stimuli remain salient in a person's mind even after exposure. This difficulty in disengaging from the disgusting content may detract attention from unrelated stimuli, such as a commercial. In other words, when a commercial appears after a disgusting stimulus, the disgust-inducing scene will still be salient in individuals' minds while they watch a subsequent commercial, resulting in less encoding capacity for the commercial and a decrease in its recall. I theorize that this emotion has a functional benefit from this extensive processing because it can effectively retain the source of the contamination. However, this is not true for other emotions; a sustained exploration of fear-inducing content will be costly because threat-inducing stimuli require an immediate response (such as running away from a snake). Indeed, fear enhances sensory acquisition to rapidly evaluate the environment and act immediately whereas the opposite happens for disgust (Susskind et al. 2008). Sadness is also not biologically tuned to prolong a mental representation of the stimuli; this process provokes rumination, which is associated with mental disorders (Aldao et al. 2010; Nolen-Hoeksema 2000). Finally, the function of happiness is to explore new information and focus on future events (Fredrickson 2001).

Happiness can even be reduced by overthinking one's happiness and its drivers, revealing a biological disadvantage of prolonged mental processing of this emotion (Schooler and Mauss 2010; Wegner 1994).

In Study 1, 39 students from a large European University watched 20 emotional videos interspersed with 20 commercials (30-second) in a laboratory setting. I divided the emotional videos into four blocks—each block eliciting the same discrete emotion—interspersed with the commercials. After watching all emotional videos and commercials, participants completed a 5-minute filler task and then wrote down all the brands that they remembered having seen. Responses were coded in a binary variable: 1 = correct brand or very specific features presented in the commercial; 0 = otherwise. Results revealed that compared to disgust, sadness and happiness increased ad recall.

Given the low sample size and the possibility of emotional spillovers that a within-subjects design could elicit, we decided to test the effect in a larger sample and with a between-subjects design. In Study 2, 149 students from a large European University were randomly allocated to one type of emotional block (happiness, sadness, fear, disgust). They watched five emotional videos for each emotion interspersed with five commercials. Then they completed a 5-minute filler task and wrote down all the brands that they remembered having seen. Responses were coded in a binary variable in a similar way to the previous study. Results showed that compared to disgust, sadness and fear increase ad recall. Of note, disgust-fear was now significant (contrary to Study 1). Differences between disgust and happiness also indicated the expected pattern (i.e., disgust produced poorer recall than happiness), but they were not significantly different. Overall, Studies 1 and 2 supported our hypothesis that disgust is the emotional context that harms ad recall the most.

In Study 3 I assessed an alternative explanation, whether arousal or valence of the emotional contexts explained subsequent ad recall levels. Two hundred and fifty participants randomly watched four emotional videos (one for each emotion: happiness, sadness, fear, and disgust). Each video was randomly drawn from the pool of emotional videos used in Studies 1 and 2. Then they filled in an arousal and valence scale for each of the videos. Results showed that fear-inducing videos were the most arousing ones. This finding ruled out arousal as the primary explanatory mechanism of disgust effects on memory. Indeed, if arousing emotional contexts decrease recall for subsequent stimuli (Pavelchak, Antil, and Munch 1988), I should have observed the lowest recall for fearful contexts and not disgusting ones. It was also previously proposed that positive emotional contexts increase recall for subsequent stimuli (Goldberg and Gorn 1987). However, I also ruled out this possibility because if that were the case, I should have observed a higher ad recall for happiness compared to the other emotional contexts—which did not happen. Overall, Study 3 supports my theorizing that the effect of disgust on memory for subsequent events goes above and beyond an explanation based on arousal-valence emotional dimensions.

To the best of my knowledge, I am the first to propose that contextual disgust reduces commercials' recall as compared to other emotional contexts. This work contributes to emotion theory by proposing that disgust has stronger carry-over effects compared to other discrete emotions, which impedes a proper encoding of subsequent stimuli. Moreover, neither valence nor arousal of the emotional context explained the memory effects observed, which emphasizes the importance of studying discrete emotional models (vs. dimensional emotional models) to better understand psychological mechanisms specific to each emotion.

I also extend decision-making literature by showing that carry-over effects of discrete emotions also affect memory-related processes (not only judgments or decisions). Finally, this chapter provides recommendations concerning the emotional context that practitioners should avoid/seek to maximize brands' recall and ways to optimize the pricing strategy of commercial spots.

In conclusion, this dissertation offers important contributions to marketing: (1) it provides novel theoretical findings to literature in advertising, decision-making, creativity, and emotions; (2) it gives practical recommendations for creative managers, advertising professionals, and media agencies.

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