Check for updates

AMERICAN MARKETING ASSOCIATION

Article

Journal of Marketing Research
1-21
© American Marketing Association 2020
Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/0022243719892594
journals.sagepub.com/home/mrj
SAGE

The Enhancing Versus Backfiring Effects of Positive Emotion in Consumer Reviews

Matthew D. Rocklage and Russell H. Fazio

Abstract

Researchers, marketers, and consumers often believe that amplifying emotional content is impactful for the spread of information and purchasing decisions. However, there is little systematic investigation of when emotionality backfires. This research demonstrates *when* and *why* positive emotion can have enhancing versus backfiring effects. The authors find that reviewers who express greater positive emotion are indeed more positive toward their products, regardless of product type. In addition, expressed emotion for hedonic products has a positive impact when read by others, but this emotion backfires for utilitarian products, leading others to be less positive. The authors construct a conceptual model of these effects and show that violated expectations leading to decreased trust underlie this divergence between reviewers and readers. The effects occur in well-controlled experiments as well as computational linguistic analysis of 100,000 Amazon reviews across 500 products. Indeed, emotional reviews of utilitarian products are less likely to become popular and be displayed on the product's front page on Amazon. This work also introduces a novel tool for quantifying natural language in marketing: the Evaluative Lexicon.

Keywords

emotion, language, online reviews, trust, word of mouth

Online supplement: https://doi.org/10.1177/0022243719892594

Attesting to their expanding importance in the real world, consumer reviews, online word of mouth, and the research to understand them have shown considerable growth in the past decade (Berger 2014; King, Racherla, and Bush 2014). Amazon, TripAdvisor, and Yelp alone have become repositories for over half a billion reviews. Moreover, the stakes are high in this domain. Research has demonstrated the causal impact of online reviews on consumer behavior (Chevalier and Mayzlin 2006), and, combined with face-to-face communication, online reviews and exchanges are estimated to generate $6 trillion in sales annually (Word of Mouth Marketing Association 2014).

Consumers use online reviews not only to examine star ratings (Chen and Lurie 2013; De Langhe, Fernbach, and Lichtenstein 2016) but also to gain a more nuanced understanding of the product by reading the text of the reviews (Murphy 2017; Smith and Anderson 2016). Businesses that host online reviews have focused on providing high-quality content to encourage customers first to visit and then return to their websites. For example, Yelp's Vice President of Consumer and Mobile Products has said that if reviewers write short, low-quality reviews, that would represent "failure for us. . . . Everything on the product design was based on mitigating that risk" (Baer 2014). In addition, speaking to its importance to their bottom line, the chief executive officer of TripAdvisor, Steve Kaufer, has said that quality review content "is the currency used to connect with travelers at the right time, the place, and the right product" and thus "is second to none" in priority for the company (Bujarski 2017).

Mirroring this importance of content, researchers have increasingly aimed to understand both what drives consumers to express their opinions and share content as well as the kind of content that is most impactful (King, Racherla, and Bush 2014; Moore 2015; Packard and Berger 2017; Schellekens, Verlegh, and Smidts 2010). In this regard, a primary interest has been in emotion. Overviews of the literature have put forth emotion as a predominant component of online content and word of mouth (Berger 2014; Hennig-Thurau et al. 2004). For example, research has emphasized that sharing emotional experiences is common (for a review, see Rimé [2009]) and that emotional content is more likely to become popular and spread (Berger and Milkman 2012).

Matthew D. Rocklage is Assistant Professor of Marketing, University of Massachusetts Boston, USA (email: matthew.rocklage@umb.edu). Russell H. Fazio is Harold E. Burtt Professor of Psychology, Ohio State University, USA (email: fazio.11@osu.edu).

Consumers themselves also believe that greater emotionality in online reviews will have a greater impact on others and their purchasing decisions (Rocklage, Rucker, and Nordgren 2018b). When asked to write a maximally impactful review, consumers turned to emotionality in an attempt to persuade others to purchase a product. These results held across all types of products, even if the products were not associated with emotional experiences. That is, reviewers used greater emotionality for both hedonic and utilitarian products.

Thus, there is a general belief that greater emotionality should be more impactful to consumers. Is this necessarily the case? As we detail subsequently, research concerning consumer reviews has largely not addressed this question. Moreover, the related literature on emotional content in advertising provides inconsistent results. The impact of emotional content in online reviews is therefore an open question.

To better understand the effect of emotionality in consumer reviews, the current research conducts a computational linguistic analysis of 100,000 real-world online product reviews in conjunction with in-laboratory experiments. In line with the predominant view of positive emotionality to date, we show that reviewers who are more emotional toward their products are themselves all the more favorable toward that product, regardless of the type of product. Moreover, when these emotional reactions are expected—as in the case of hedonic products—emotion enhances the review: readers find this emotion to be helpful for their purchasing decisions and encourages their actual product choice. However, when it is relatively unexpected—as in the case of utilitarian products—that very same level of expressed emotion backfires: it is perceived as odd and surprising, is considered relatively unhelpful, and lowers choice for that product. To explain these effects, we then test a conceptual model showing they are explained by consumers' expectations and their resulting trust in the review.

Previous Research on Emotional Content

Table 1 provides an overview of the research on emotional content in consumer reviews. The table also overviews work that utilizes hedonic versus utilitarian products, regardless of whether it includes emotional content (for an extended table, see the Web Appendix). We highlight research from this table that is most relevant to the current work.

Succinctly, research on consumer reviews has largely not explored the conditions in which emotional (vs. unemotional) reviews are more impactful versus when they might backfire. Research has instead focused on, for example, the impact of language that is more figurative (e.g., metaphorical) versus literal (Kronrod and Danziger 2013).This previous work found that figurative language is more impactful when used to describe hedonic products, but literal language is more impactful for utilitarian products. However, the emotion implied in a review and that review's figurativeness are different constructs. For example, one of the literal phrases used in this research, "the product arrangement is very organized," appears quite similar in emotion to the figurative phrase, "the products . . . are ordered like soldiers in a military inspection." Perhaps just as important, this research also did not assess this impact in real-world reviews, and thus, its generalizability is unclear.

Closest to the current research, some findings have indicated that greater implied energy levels of reviewers (their "arousal")—operationalized primarily through added exclamation points and capitalization—generally predicts greater perceived helpfulness of a review and that this increasing arousal shows diminishing returns after a certain point (Yin, Bond, and Zhang 2017). However, this research did not offer consistent evidence for when these increases might backfire. Moreover, arousal and emotionality are distinct constructs. Arousal refers to energy level, whereas the emotionality of an opinion is the extent to which that opinion is based on emotions or feelings, which can be high or low in arousal (Rocklage, Rucker, and Nordgren 2018a; Russell and Barrett 1999). For example, the adjectives "exciting" and "lovable" imply very similar levels of emotionality but imply higher versus lower levels of arousal, respectively. Research has directly shown the separability of emotionality from arousal in online reviews (see Rocklage, Rucker, and Nordgren 2018a). Thus, work on consumer reviews has yet to examine emotionality and when it produces enhancing versus backfiring effects.

The persuasion literature also has the potential to shed light on the effect of emotional content. This research has focused on the efficacy of emotional advertisements. These results should be applied to consumer reviews with caution, however, given that consumers approach advertisements with a very different mindset compared with other forms of communication; moreover, research comparing advertising to other contexts (e.g., reviews) has indicated that the same content can lead to different outcomes (Friestad and Wright 1994; Hung and Wyer 2008; Kirmani and Zhu 2007; Kronrod and Danziger 2013; Xu and Wyer 2010). Nevertheless, this literature has shown inconsistent effects of emotional content, though there is some indication that its efficacy is moderated by individual differences (e.g., age; for a literature review, see the bottom portion of Table W1 in Web Appendix). Most important to the current aims, although it has long been hypothesized that the efficacy of emotional advertising differs by hedonic versus utilitarian products (Vaughn 1980), two recent, large-scale studies indicate that more emotional advertisements tend to be more persuasive regardless of product type (Geuens, De Pelsmacker, and Faseur 2011; Pham, Geuens, and De Pelsmacker 2013).

Generally, then, previous work has hinted at the possibility that the impact of emotional content depends on different factors, but this has not been shown within consumer reviews. Moreover, although research within persuasion has hypothesized that the effect of emotion is moderated by product type, there is conflicting evidence for this, perhaps due to the special context advertising provides. The current work aims to demonstrate when emotional content in consumer reviews is more impactful and when it backfires, as well as to provide a conceptual framework for why this occurs. Pivotal to this understanding is a consideration of online reviews from the perspective of both the reviewer and the reader.

Table 1. Comparison of Related Literature.

Research	Construct(s) Studied	Primary Outcome(s)	Summary	Hedonic Versus Utilitarian?	Primary Mediator	Stimuli
Schindler and Bickart (2012)	"Strong emotion" (e.g., exclamation points, emotion words)	Helpfulness (dichotomous: most vs. least helpful)	"Strong emotion" did not predict which reviews were categorized as most versus least helpful.	No	—	Reviews from various sources (selected by participants as the most vs. least helpful review they read)
Kronrod and Danziger (2013)	Figurative language (e.g., metaphor, simile)	Attitude toward product, product choice	Figurative (vs. literal) language predicted greater favorability toward hedonic, but not utilitarian, products.	Yes	Language typicality	Constructed reviews
Ludwig et al. (2013)	Valence[a] (positivity vs. negativity of aggregated reviews)	Conversion rate (% of consumers purchasing product)	Change in positivity and negativity of aggregated reviews predicted conversion rate.	No	—	Amazon reviews
Yin, Bond, and Zhang (2014)	Anxiety versus anger	Helpfulness (proportion), helpfulness (scale item)	Anxiety expressed toward merchant about purchase process was considered more helpful than expressed anger.	No	Perceived reviewer effort	Yahoo! Shopping (reviews of merchants), constructed reviews
Moore (2015)	Explained actions versus explained reactions ("I bought because…" vs. "I like because…")	Helpfulness (scale item); purchase intentions	Explained actions (reactions) were more helpful for utilitarian (hedonic) products.	Yes	Readers' ability to predict their future attitude	Amazon reviews (subset of 24 reviews selected by the researcher), constructed reviews
Yin, Bond, and Zhang (2017)	Arousal ("level of energy")	Helpfulness (absolute #); helpfulness (scale item)	Greater arousal predicted greater helpfulness, but with diminishing returns. Evidence that this was particularly true of utilitarian apps was inconsistent.	Yes	Perceived reviewer effort	Apple app reviews, constructed reviews
Current research	Emotionality (extent to which evaluation is based on feelings/ emotional reactions)	Helpfulness (proportion), helpfulness (scale item), attitude toward product, purchase intentions, product choice, review spread	Emotionality is more helpful and leads to increased choice for hedonic products but decreases choice for utilitarian products.	Yes	Trust in review	Amazon reviews, constructed reviews

[a]Although Ludwig et al. (2013) used the LIWC's (Pennebaker et al. 2015) positive and negative "emotion" dictionaries, we label this as valence given previous findings that LIWC largely measures valence rather than emotionality (Rocklage, Rucker, and Nordgren 2018a).

Notes: We include those papers that focus on emotional content, generally speaking, and that feature products. We also include work that utilizes hedonic versus utilitarian products, regardless of whether it includes emotional content. In the table itself, we focus on the aspects of each paper that are applicable to the aims of the current research.

Understanding Emotionality's Effect in Consumer Reviews: Theoretical Background

Diverging Perspectives for Reviewers Versus Readers

Reviewers and readers inherently view products from two different perspectives (e.g., Moore 2015; Packard and Berger 2017). Reviewers write from the perspective of someone who has used the product. Given that emotionality is an integral part of the consumption experience, consumers naturally express emotion when describing their experience with products (Havlena and Holbrook 1986; Holbrook and Hirschman 1982). Research indicates that this emotion may

be quite impactful to consumers when they themselves experience it (Pham 1998, 2007; Schwarz 2012; Shiv and Fedorikhin 1999). For example, online reviewers who express more emotional positive reactions provide a more positive star rating of their products (Rocklage and Fazio 2015; Rocklage, Rucker, and Nordgren 2018b). Thus, in the current research we predict that we will replicate these findings and show that the more emotional reviewers are in their review, the more positive their final star rating, regardless of the type of product (H_1).

> **H_1:** Greater positive emotionality expressed by the reviewer predicts a more positive summary judgment from that reviewer.

In contrast, readers who are considering a purchase, and therefore have the perspective of a potential buyer, focus on the features of the product that are most important to them. One candidate for when these perspectives align versus diverge is the common division of products into those that are hedonic versus utilitarian (Batra and Ahtola 1991; Hirschman and Holbrook 1982; Voss, Spangenberg, and Grohmann 2003).

For hedonic products, reviewers' and readers' perspectives are likely to align. Hedonic products tend to elicit positive emotional reactions (Khan, Dhar, and Wertenbroch 2005) and are regularly described with words such as "enjoyable" and "exciting" (Voss, Spangenberg, and Grohmann 2003). Moreover, consumers' goal for seeking and using a hedonic product is often to evoke an emotional reaction in themselves (Batra and Ahtola 1991; Pham 1998). Any emotion reviewers encounter through their consumption experience is likely be expected and desired information by readers. Thus, we hypothesize that greater emotionality toward hedonic products is in line with readers' expectations and therefore perceived as not all that odd or surprising.

Utilitarian products, in contrast, provide a situation in which reviewers' and readers' perspectives have an increased probability of misaligning. Through the course of the consumption experience, reviewers may truly find their blender to be "delightful" or even "amazing"—in other words, an experience that elicits an emotional, feelings-based reaction. Previous work has indicated that despite their utilitarian nature, such products have the ability to elicit emotional responses and that consumers' consumption experience is a pivotal elicitor of this emotionality (Alba and Williams 2013; Jordan 2000; Lakshmanan and Krishnan 2011; Norman 2004; Pham 1998; Westbrook 1987). Nevertheless, utilitarian products are not predominantly associated with their ability to elicit emotion (Voss, Spangenberg, and Grohmann 2003), and readers are likely to enter the online review context expecting relatively low levels of emotionality for them (H_{2a}). When reviewers provide emotional content, these expectations will be violated and lead readers to find their comments somewhat odd and surprising (H_{2b}).

> **H_{2a}:** Readers expect less emotionality for utilitarian (vs. hedonic) products.
>
> **H_{2b}:** Readers find greater emotionality odder and more surprising for utilitarian (vs. hedonic) products.

Trust in the Review

Surprise toward a review has the potential to provoke negative reactions from readers (Van Kleef et al. 2011). Indeed, although there are contexts in which defying consumers' expectations can be positive (Westbrook and Oliver 1991), these positive outcomes often stem from consumers' own experience with the product exceeding their expectations. With direct experience, the quality of the product is unlikely to be doubted (Fazio and Zanna 1981). Readers, however, must rely on an anonymous consumer's description of a product—a product that readers may know little about (Smith and Anderson 2016). In this way, online reviews present a particularly challenging situation. Readers must use the content of the review to simultaneously discern the quality of the product and the extent to which they should rely on that review (King, Racherla, and Bush 2014; Ku, Wei, and Hsiao 2012). We argue that the emotional content of the review influences the extent to which consumers believe they can trust that review—in other words, the extent to which they believe they can rely on that review for decision making (Doney and Cannon 1997; Ganesan 1994).[1]

Despite the important role that trust plays in online reviews, little work has systematically investigated its role in this domain, and there have been recent calls for a greater understanding of its role in online word of mouth (King, Racherla, and Bush 2014). Moreover, previous work has most often focused on whether consumers believe the platform that hosts the online reviews or the sellers of the product are trustworthy sources of information (e.g., Awad and Ragowsky 2008; Ba and Pavlou 2002; Sparks and Browning 2011). However, recent research has begun to identify antecedents of trust in online reviews based on content (through, e.g., boasting, swear words; Hair and Ozcan 2018; Packard, Gershoff, and Wooten 2016; Racherla, Mandviwalla, and Connolly 2012). We build on this nascent work by providing an understanding of when and why emotional content can decrease trust.

Specifically, work on attribution has shown that when individuals' expectations are violated, they begin an inferential process to understand what caused the mismatch between their expectations and the new information (Hastie 1984; Jones and Nisbett 1972; Weiner 1985). In the case of online reviews, readers can attribute the mismatch largely to the product or the review: either the product is truly capable of evoking an

[1] Although "trust" has also been used more narrowly to refer to perceptions of "honesty," following prior work we use the broader definition of trust as the belief that something (in this case, a review) can be relied on (Doney and Cannon 1997; Ganesan 1994). These beliefs may be related to consumers' perceptions that a review is attempting to deceive them, but, as we demonstrate, they also are informed by a reviewer's expertise or explanations of their emotional reactions.

emotional reaction, or the review is so atypical that it should not be trusted. Rather than overturn their expectations for that category of products based on an atypical review, readers are instead likely to lose trust in the review. Consequently, they are apt to find the review less helpful (H_{3a}) and to be less favorable toward the product than if they had relied on the positive information in the review (H_{3b}; for an illustration of the process, see Figure 2).

> **H_{3a}:** Greater emotionality for utilitarian (vs. hedonic) products leads to mistrust of the review, which then leads to decreased review helpfulness.
>
> **H_{3b}:** Greater emotionality for utilitarian (vs. hedonic) products leads to mistrust of the review, which then leads to decreased favorability toward the product

In line with this conceptual reasoning, any approach reviewers can take to increase readers' willingness to rely on (i.e., trust) their review should moderate these effects. For example, research on word of mouth and persuasion has shown that consumers are more willing to rely on individuals with greater expertise (Gilly et al. 1998; Petty and Wegener 1998). If trust is a pivotal mechanism, experimentally bolstering reviewers' perceived expertise should lead readers to be more likely to rely on even highly emotional reviews of utilitarian products (H_{4a}). Furthermore, as readers begin their attribution process, they are likely to search for why reviewers had the reactions they did (Hastie 1984; Malle 2004). Thus, if reviewers provide an explanation of their reactions, the effects should be attenuated (H_{4b}). In both cases, these characteristics should lead readers to have relatively greater difficulty attributing the reviewer's reactions as unreliable.

> **H_{4a}:** Expert (vs. anonymous) reviewers lead readers to trust more emotional reviews for utilitarian (vs. hedonic) products.
>
> **H_{4b}:** Reviews that contain an explanation of reviewers' reactions show less of an effect of emotional content on helpfulness judgments.

The Evaluative Lexicon: Measuring Consumers' Reactions Using Natural Language

To test our hypotheses, we use both laboratory experiments and computational linguistic analysis of real-world online reviews across 500 unique products. To do so, we use the Evaluative Lexicon (EL; Rocklage and Fazio 2015; Rocklage, Rucker, and Nordgren 2018a), a recent methodological advance in quantifying natural language to measure an opinion's valence (its positivity), extremity (the extent of this positivity), and emotionality (the extent to which it is an opinion based on emotions or feelings; software available at www.evaluativelexicon.com).

The EL has been validated both experimentally under well-controlled lab conditions and in natural, archival text. For instance, Rocklage and Fazio (2015, Study 2) created emotionally based versus cognitively based attitudes in the lab by exposing participants to different passages about a fictitious sea animal, similar to prior research (Crites, Fabrigar, and Petty 1994; Fabrigar and Petty 1999). The passages themselves were emotionally evocative narratives of a swimmer's encounter with the animal (joyful or terrifying) or encyclopedic presentations of the attributes of the animal (largely positive or negative). Drawing on the adjectives individuals used, the EL successfully predicted which condition participants were in (e.g., emotional or cognitive) 88.2% of the time.

Moreover, using natural text from 1.1 million Amazon reviews, Rocklage and Fazio (2015) found that the more emotional an EL adjective, the more often it was accompanied by the verb "feel" (vs. "think"/"believe") within the reviews themselves. Because the emotionality index is a continuum ranging from more emotional to more cognitive, this same association indicated that the more cognitive the adjective, the more it was accompanied by "think"/"believe." Indeed, prior research has shown that there is a strong inverse relation between the emotion versus cognition an EL adjective implies ($r = -.75$; Rocklage and Fazio 2018).

The EL has also been shown to be distinct in its ability to measure the emotionality of evaluations relative to other commonly used language analysis tools such as the Linguistic Inquiry and Word Count (LIWC; Pennebaker et al. 2015). Specifically, although LIWC appears to contain measures of positive and negative emotion, these measures include a number of words that are relatively unemotional (e.g., "okay," "inferior"). Indeed, research suggests that the LIWC emotion measure may capture valence (the text's positivity) but not necessarily emotionality (Rocklage, Rucker, and Nordgren 2018a; see also Kross et al. 2019). Moreover, across 5 million Amazon reviews, the correlation between LIWC emotion and EL emotion demonstrated little overlap ($r = .05$; Rocklage, Rucker, and Nordgren 2018a). Finally, the EL's measure of emotionality is distinct from arousal (the energy level of the text) as indexed by Warriner, Kuperman, and Brysbaert's (2013) linguistic tool, showing a moderate but separable correlation ($r = .43$; Rocklage, Rucker, and Nordgren 2018a).

Important to the current aims, and illustrative of its unique value, the EL also makes a distinction between the emotionality and the extremity of individuals' evaluations (i.e., the extent of its positivity). For example, whereas the word "exciting" is both extremely positive and emotional, the EL also includes words that differ along both of these dimensions. "Smart," for instance, is just as extremely positive (3.34 out of 4.50) but is quite low in emotionality (2.89 out of 9.00). Previous research has shown that these are related but separable constructs—they demonstrate a moderately positive correlation ($r \sim .47$), but each often predicts unique variance (Rocklage and Fazio 2015; Rocklage, Rucker, and Nordgren 2018a). Thus, we assess the separable effects of both extremity and emotionality to examine the impact of emotionality per se.

Study 1

We begin by investigating the effects of emotionality in a real-world setting using online product reviews. These reviews enable us to test whether emotionality predicts more favorable judgments from reviewers for their product (H_1) and examine the downstream consequences this emotional content has on how helpful readers found the review. Although the helpfulness of a review does not directly indicate whether a consumer then went on to purchase the corresponding product, a favorable review that is perceived as particularly helpful is likely to influence readers to be more likely to purchase the product. Indeed, prior research has demonstrated that the helpfulness of a review is linked to consumers' final purchase decisions on Amazon (Chen, Dhanasobhon, and Smith 2008).

Method

Data. We used a large database of 5.9 million Amazon product reviews that were originally extracted via an automated script from Amazon (see Jindal and Liu 2008). They represent the Amazon reviews written between 1996 and 2006 and therefore encompass an extremely large range of products, from those that are more hedonic in nature (e.g., movies, music, novels) to those that are more utilitarian (e.g., software, textbooks, electric shavers). Each review contained the text that consumers had written to express their evaluation of their product as well as their final favorability judgment of the product in the form of a star rating (one through five stars).

These reviews were also judged by other potential customers who visited the Amazon webpages for that product. Specifically, these visitors have the opportunity to indicate how impactful they found the review by expressing whether they found it helpful or not ("Was this review helpful to you?"; yes/no).

Products. Given that the Amazon data set did not identify specific product types, our first step was to use a systematic approach to identify those products that were relatively more hedonic versus utilitarian in nature. In line with previous research on distinguishing hedonic versus utilitarian products at a normative level, we identified these products on the basis of the average emotionality the products elicited from consumers. For example, research has found that hedonic products are more likely to be described using emotional descriptors (e.g., video games and vacation resorts described as enjoyable and exciting) versus relatively unemotional descriptors for utilitarian products (e.g., batteries and diapers described as helpful and effective; Batra and Ahtola 1991; Voss, Spangenberg, and Grohmann 2003). (As we demonstrate in subsequent studies in the current work, there is evidence that this is the case for the EL adjectives in particular.)

Given that we were interested in the relative emotionality reviewers expressed for their product, we utilized reviews in which the consumer focused on discussing the positive aspects of the product (i.e., those reviews in which the consumer used only positive EL adjectives; $N_{reviews} = 3.1$ million). Indeed, our previous analyses of Amazon reviews indicated that negative reviews are relatively rare; positive reviews account for 80% of online reviews (Jindal and Liu 2008), if not more (Filippas, Horton, and Golden 2018). Reviews typically range from weak to strong endorsements (Rocklage and Fazio 2015), and we therefore focused on those that were indeed endorsements, varying in their expressed emotionality.

To measure the emotionality each consumer expressed, we followed previous research using the EL and calculated the weighted average emotionality for each review (see Rocklage and Fazio 2015). After creating this metric for each review, we averaged this index for all the reviews for each product. To obtain an accurate calculation of a product's average level of emotionality, we limited the analyses to those products that had at least 50 positive reviews ($N_{products} = 5{,}171$). Indeed, although many products have hundreds of reviews written about them, others have as few as one review, which may not accurately reflect the nature of the product. From the resulting distribution of all positive reviews, we selected those products that were the top 5% most emotional in nature (emotionality of 5.71 or greater) versus those products that were the 5% least emotional in nature (emotionality of 4.97 or less).

Final details of the data. Using this approach, we were left with 23,452 reviews across 258 hedonic products and 23,380 reviews across 258 utilitarian products ($N_{reviews} = 46{,}832$; $N_{products} = 516$) that had been judged as helpful or not by other consumers (for a summary of the descriptive statistics, see the Web Appendix).[2] Importantly, though these products were normatively either hedonic ($M_{emotionality} = 5.81$, $SD = .81$) or utilitarian ($M_{emotionality} = 4.81$, $SD = .87$), the reviewers within each product type varied a great deal in their expressed emotionality. Indeed, although the products were chosen so as to maximize their hedonic versus utilitarian nature, the standard deviation for each product type indicates there is a great deal of overlap in expressed emotionality. Moreover, for both hedonic and utilitarian products, the emotionality of consumers' reviews ranged from 2.50 to 7.61, the full range possible for the positive EL adjectives. Thus, in line with previous work (Westbrook 1987), consumers can express emotionality toward even utilitarian products, despite the clear difference in average emotionality for hedonic versus utilitarian products.[3] The products within each category fit with expectations. Hedonic

[2] We excluded 5,193 reviews because they had not been judged by consumers.

[3] We supported the hedonic versus utilitarian nature of the products in two additional ways. First, we show that consumers used additional language that indicated that they viewed each product type as more hedonic or utilitarian. If consumers assess hedonic products in terms of the feelings they evoke, they should be more likely to use the verb "feel" when describing their evaluation versus "think" or "believe." Conversely, if consumers assess utilitarian products on the basis of their practical uses, they should use "feel" relatively less than verbs denoting a rational, cognitive assessment more (i.e., "think" and "believe"). This is indeed what we found (see the Web Appendix). Second, we also supported the categorization via external ratings and replicate the findings when using the classification from these ratings (see the Web Appendix).

Table 2. Effects of Review on Consumer Helpfulness Judgments as a Function of Review Content and Characteristics (Study 1).

	(1) Primary Model	(2) With Controls	(3) With Fixed Effects
Primary Predictors			
Emotionality			
Emotionality (utilitarian)	−.023*** (.003)	−.022*** (.003)	−.008** (.003)
Emotionality (hedonic)	.012*** (.003)	.012*** (.003)	.006* (.003)
Extremity	.027*** (.002)	.017*** (.002)	.008*** (.002)
Product type	.026*** (.002)	.017*** (.002)	.128*** (.024)
Emotionality × Product type	.018*** (.002)	.017*** (.002)	.007*** (.002)
Extremity × Product type	−.001 (.002)	−.001 (.002)	.008*** (.002)[a]
Additional Control Variables			
Review final rating		.062*** (.002)	
Review length		.045*** (.002)	.060*** (.001)
Review order		−.020*** (.002)	−.004* (.002)
Review final rating fixed effects	No	No	Yes
Individual product fixed effects	No	No	Yes

*$p \leq .05$.
**$p \leq .01$.
***$p \leq .001$.
[a]This interaction indicates that extremity continued to have an effect on helpfulness judgments for hedonic products (B = .02, t(46,306) = 5.23, $p < .001$) but fell to nonsignificance for utilitarian products (B = .0003, t(46,306) = .11, $p = .91$).
Notes: Product type: −1 = utilitarian products, 1 = hedonic products; all other predictor variables are standardized. Review order: higher numbers indicate reviews written later. Standard errors are in parentheses.

products included action and children's movies, music, fiction novels, memoirs, and interactive children's toys. Utilitarian products included software, textbooks, Global Positioning System units, headphones, power tools, and electric shavers.

Across these reviews there was a total of 555,508 helpfulness ratings ($M_{per\ review} = 10.68$, SD = 32.67) in which visiting consumers had signified whether a review was helpful by clicking either a "yes" or "no" button after reading the review. To index the helpfulness of each review, we followed prior research (e.g., Chen, Dhanasobhon, and Smith 2008; Danescu-Niculescu-Mizil et al. 2009; Mudambi and Schuff 2010) and calculated the proportion of visiting consumers who found that review helpful out of the total number of consumers who voted on that review (M = .67, SD = .34).

Results

Reviewers' evaluations. Urging others to purchase a product is associated with using greater emotionality (Rocklage, Rucker, and Nordgren 2018b). Moreover, research has indicated that the more emotional consumers are in their opinions, the more positive they are toward their product (Rocklage and Fazio 2015; Rocklage, Rucker, and Nordgren 2018a). Thus, an interesting added irony of our hypothesized results would be that although more emotional reviewers are also even more positive toward their product, this emotionality can backfire when expressed to others.

We used regression to examine whether the emotionality expressed by reviewers predicted how positive they were toward their product, as indexed by their final star rating of the product. Following previous work, to assess their emotionality per se we also controlled for how extremely positive their language was. We effects-coded product type as hedonic (coded as 1) or utilitarian (−1) and standardized the implied emotionality and positive extremity of the reviews. To test our hypothesis, we entered an emotionality × product type interaction as well as an extremity × product type interaction.

Replicating prior research, greater implied positive extremity was related to a more positive final judgment (i.e., a higher star rating; B = .24, t(46,826) = 32.67, $p < .001$; all zero-order correlations for all studies provided in the Web Appendix). Most importantly, there was an overall effect of emotionality, beyond extremity, indicating that more emotional reviews were related to more positive final judgments (B = .04, t(46,826) = 5.39, $p < .001$), and this was not qualified by product type (B = .01, t(46,826) = 1.63, $p = .104$). Regardless of whether reviewers wrote about a hedonic product such as a movie or a utilitarian product such as a blender, the more emotional their review, the more positive their star rating.

Primary analyses: readers' evaluations. We used the same model to assess whether this emotionality had a similar impact on readers in terms of the proportion who found the review helpful. We provide this as Model 1 in Table 2, which supported the hypotheses. However, if the emotional content of the review was a determining factor in visiting consumers' judgments, this effect should persist even when we control for other aspects of the review. One such aspect is the length of the review (number of words; M = 172, SD = 148), which has been shown to be an important determinant of review helpfulness given that it is likely to signal greater depth of the review (e.g., Mudambi and Schuff 2010). Given the importance of star ratings (Chevalier

and Mayzlin 2006; De Langhe, Fernbach, and Lichtenstein 2016), we also aimed to ensure that it was not the star rating itself that was influencing readers rather than the content of the review. Finally, to control for temporal aspects of each review, we controlled for how recently the review was written (order written, log-transformed).

We report the results of this model in Table 2 (Model 2) and summarize them here. Across both product types, we found that more extremely positive language was more impactful to consumers ($B = .017$, $t(46,823) = 8.02$, $p < .001$). This effect makes sense, as a more extremely positive review, regardless of product type, leaves less ambiguity about the merits of the product and should therefore be more convincing.[4] More importantly, there was a significant emotionality × product type interaction ($B = .017$, $t(46,823) = 7.51$, $p < .001$; see Figure W1 in the Web Appendix). For hedonic products, a greater proportion of consumers clicked "yes," indicating that they found a review to be helpful when the reviewer expressed greater emotionality ($B = .012$, $t(46,823) = 3.62$, $p < .001$). However, this emotionality backfired for utilitarian products: a greater proportion of consumers clicked "no," that they did not find the review helpful, when it conveyed this same level of emotionality ($B = -.022$, $t(46,823) = 7.05$, $p < .001$).[5]

The effect of emotionality also held when we included fixed effects to control for the review's final star rating as well as fixed effects to control for each of the 516 individual products (Table 2, Model 3). This indicates that the effect of emotionality was not driven by reviews of a specific star rating or by certain products. Furthermore, to provide additional evidence of the causal nature of emotionality, we used propensity score matching. This approach aims to simulate an experiment by matching each high-emotion review with an equivalent low-emotion review and then assessing whether emotionality continues to influence helpfulness judgments. The results were again replicated (see the Web Appendix).

Discussion

Despite more emotional reviewers being all the more favorable toward their product (H_1), this emotionality did not always have a larger impact on readers. Whereas emotionality was more impactful to readers in reviews for hedonic products, that same level of emotionality backfired for utilitarian products. Moreover, these effects of emotionality held above and beyond additional important facets of the review such as its extremity, length, star rating, and when it was written. Although this study had the advantage of investigating the effects of emotionality in a real-world environment, we aimed to bring these effects into the laboratory under well-controlled conditions and extend their generalizability.

Study 2

A primary aim of the current study was to demonstrate that the emotionality of consumers' product descriptions has an impact on others' favorability toward the product itself. Succinctly, we reasoned that if readers find a positive review helpful, they should be more likely to integrate this information into their judgments of the product and thereby become more favorable toward that product. However, if readers discount a reviewer's positivity, they will be comparatively less favorable toward that product.

We also aimed to rule out alternative explanations. Specifically, consumers enter the online review context with different vocabularies. It is possible that those with a more limited vocabulary turn to emotion when they do not know how else to describe their opinions. This would not be problematic for hedonic products, given that emotion is in line with their nature, but it could backfire for utilitarian products. It could be this limited vocabulary, rather than emotion, that leads to less impactful reviews. Moreover, a limited vocabulary may also influence the length of reviews consumers write, which predicts the impact of the review. We control for these possibilities by providing all participants access to the same set of words and requiring that they construct descriptions that are of the same length.

Finally, it is possible that only Amazon readers who were particularly affected by a review—either positively or negatively—offered a judgment of the helpfulness of that review. Thus, we randomly assign readers to assess a set of reviews, all of which they judge.

Method

To briefly overview, we randomly assigned a set of participants to review either a hedonic or utilitarian product using EL adjectives. We then recruited a second set of participants to assess how helpful each review was as well as their favorability toward the product.

Reviewers. Reviewers were recruited via Amazon's Mechanical Turk (MTurk; $N = 200$; $Range_{age} = 19$ to 71 years old, $M_{age} = 36$ years; 59% male, 41% female).

Readers. Readers were also recruited via MTurk ($N = 242$; $Range_{age} = 19$ to 71 years old, $M_{age} = 36$ years; 48% male, 51% female, 1% chose not to identify their gender). We recruited this number of readers to provide an average of 25 judgments per review (see the next section for details).

[4] Although the effect of positive extremity across these studies most often contributes to greater helpfulness, as demonstrated across analyses provided in the Web Appendix, the effect of extremity is also somewhat less consistent than that of emotionality. An interesting direction for future research would be to delineate when extremity has a helpful versus detrimental effect, similar to what we are doing in the current research regarding emotionality.

[5] We also investigated whether there were diminishing returns as emotionality increased, similar to what Yin, Bond, and Zhang (2017) found for arousal. We found no overall quadratic effect of emotionality ($B = -.001$, $t(46,824) = .83$, $p = .41$) nor a quadratic emotionality × product type interaction ($B = .001$, $t(46,824) = .79$, $p = .43$). Thus, the effects of emotionality were linear and positive for hedonic products and negative for utilitarian products, with no diminishing returns.

Procedure: reviewers. Reviewers were randomly assigned to identify either a hedonic product (one used to elicit a feeling) or utilitarian product (one used for a functional/practical purpose) toward which they were positive. They then wrote down the product they had thought of (e.g., music, blender). To measure the positive extremity and emotionality of their opinions, reviewers were provided the full list of positive adjectives from the EL (49 adjectives) and asked to select three adjectives that would describe their opinion of their product. Reviewers then provided their final favorability judgment of their product on two five-point scales (1 = "very negative," and 5 = "very positive" and 1 = "I hate it," and 5 = "I love it"). These were averaged together to form an index of overall favorability ($r(198) = .77$, $p < .001$; $M = 4.63$, $SD = .55$).

Regarding the average emotionality expressed toward the products via the EL adjectives, as might be expected, reviewers tended to express greater emotionality toward hedonic products ($M = 5.64$, $SD = .91$) than utilitarian products ($M = 4.52$, $SD = .81$; $t(198) = 9.22$, $p < .001$). Nevertheless, mirroring the results from Amazon, the standard deviations again indicate there was a good degree of overlap in reviewers' emotionality for the two product types. Moreover, reviewers used nearly the full range of emotionality available for both hedonic products (range: 3.19 to 7.40) and utilitarian products (range: 3.36 to 6.43) . Even with a controlled list of adjectives, consumers used more emotional language, on average, for hedonic products, even though they did sometimes express emotional reactions toward utilitarian products.

Procedure: readers. Readers were assigned to judge 20 randomly selected reviews.[6] They were provided with the type of product the reviewers wrote about (e.g., music, blender) and then the three adjectives reviewers used to describe that product. Readers were then asked to judge how helpful each three-adjective description was for whether they would purchase the product (1 = "not at all helpful," and 7 = "very helpful"; $M = 4.51$, $SD = 1.52$).

To assess their favorability toward the product itself, we then asked participants how positive they were toward that product (1 = "very negative," and 7 = "very positive") and their likelihood of purchasing that particular product (1 = "not at all likely," and 7 = "very likely"). These items were combined into an index of product favorability ($r(4,818) = .70$, $p < .001$; $M = 4.62$, $SD = 1.38$).[7]

[6] Of the 200 solicited reviews, we excluded 12 because the type of product these reviewers provided did not, by normative standards, match the type of product to which they had been assigned. For instance, one reviewer who was assigned to remember a hedonic product used a fitness tracker as his or her product. Although some individuals could view a fitness tracker as a hedonic product, it is more likely to be construed as a utilitarian product. The final sample included only those products that fell clearly within the assigned product type.

[7] Although helpfulness and favorability toward the product are associated ($r(4,818) = .81$, $p < .001$), we report the effects on each variable so as to demonstrate that both effects occur.

Results

Reviewers' evaluations. As in Study 1, we aimed to show that reviewers' greater emotionality toward a product predicted all the more positivity toward the product. We quantified the positive extremity and emotionality of reviewers' adjectives by imputing the normative EL values as in Study 1. We predicted reviewers' final judgments of their products using the three adjectives they selected. Following Study 1, we effects-coded product type as hedonic (1) or utilitarian (−1), standardized the implied extremity and emotionality of the adjectives, and entered an extremity × product type interaction and an emotionality × product type interaction.

Again, we found an effect of positive extremity such that more positive adjectives were related to more positive final judgments ($B = .15$, $t(194) = 3.52$, $p = .001$). Most importantly, above and beyond this effect, more emotional adjectives also predicted more positive final judgments ($B = .10$, $t(194) = 1.98$, $p = .05$). This effect was not moderated by product type ($B = .01$, $t(194) = .28$, $p = .78$). The more emotional reviewers were in their review, the more favorable they were toward their product, regardless of product type.

Primary analyses: readers' evaluations. Given that each reader judged multiple reviews, we used mixed modeling to analyze the data, treating readers and reviews as random factors. This approach allowed us to make full use of the data without averaging across responses and had the added benefit of providing greater confidence in the generalizability of the results to both readers and reviews not included in the current experiment (Baayen, Davidson, and Bates 2008; Judd, Westfall, and Kenny 2012). We used the same model terms as those used for reviewers, with extremity and emotionality mean-centered.

We first assessed helpfulness to replicate those results from Amazon. There was an effect of positive extremity such that more positive reviews were more helpful ($\gamma = .49$, $t(180.87) = 6.35$, $p < .001$). Most importantly, above and beyond this effect, the impact of emotionality depended on product type ($\gamma = .13$, $t(181.29) = 3.56$, $p < .001$). Emotionality was more helpful for the decision to purchase hedonic products ($\gamma = .13$, $t(181.93) = 2.57$, $p = .01$) but backfired and was less helpful for utilitarian products ($\gamma = -.14$, $t(180.79) = 2.47$, $p = .01$).

We found these same results with readers' favorability toward the product itself. Greater positive extremity led readers to be more favorable toward the product ($\gamma = .63$, $t(183.25) = 8.52$, $p < .001$). However, the impact of emotionality depended on product type ($\gamma = .15$, $t(183.61) = 4.18$, $p < .001$). Emotionality led readers to be more favorable toward hedonic products ($\gamma = .19$, $t(184.16) = 3.92$, $p < .001$) but backfired and led them to be less favorable toward utilitarian products ($\gamma = -.11$, $t(183.18) = 2.07$, $p = .04$).

Discussion

The current experiment replicated the effects of emotionality under well-controlled experimental conditions. We also

demonstrated that emotionality led to differential judgments not only of the reviews but also judgments of the product itself. Readers gave less credence to reviews that expressed emotionality toward a utilitarian product and were less likely to want to purchase that product. Finally, we also replicated the ironic effect that despite reviewers' being more favorable toward products when they were emotional (H_1), this emotionality backfired when read by others.

Study 3

In Study 3, we aimed to further bolster confidence that the effect we have seen thus far is due to the emotionality of the words used to describe the different types of products rather than some idiosyncratic difference between hedonic versus utilitarian products. To that end, and similar to prior research (Pham 1998), we held the product constant while varying only the hedonic versus utilitarian motive for using the product.

We also sought to further generalize our results by using an alternative approach for showing reviewers' reactions to participants. Specifically, we manipulated emotionality by showing participants nearly the full range of positive EL adjectives and asking them to judge the helpfulness of each one. This enabled us to vary the emotionality of the descriptions across the entire emotionality continuum rather than relying on the idiosyncratic reactions of others.

Method

Participants. Participants were recruited via MTurk (N = 200; Range_{age} = 20 to 73 years old, M_{age} = 34 years; 61% male, 39% female).

Procedure. Participants were told that they would read separate reactions to a hotel from anonymous online reviewers and that they should indicate the extent to which they found that reaction helpful as well as how likely they would be to stay in that hotel based on that reaction. Half were told that they were looking for a hotel that they would stay in to enjoy as their vacation destination (hedonic condition), whereas the other half were told that they were on a car trip and were therefore looking for a convenient hotel to sleep in just for the night before continuing their trip (utilitarian condition). Participants then judged each of 40 positive EL adjectives for the extent to which they found that description helpful to their decision to stay in the hotel (1 = "not at all helpful," and 7 = "very helpful"; M = 5.06, SD = 1.44) as well as how likely they would be to stay in that particular hotel based on that description (1 = "not at all," and 7 = "very"; M = 4.96, SD = 1.43).[8]

Results and Discussion

Given each participant judged multiple adjectives, we used mixed modeling to analyze the data and treated both participants and adjectives as random factors. We effects-coded the conditions such that participants were identified as being either in the hedonic (coded as 1) or utilitarian (−1) motive condition. We then included the normative positive extremity and emotionality of each adjective (each mean-centered) and allowed these variables to interact with condition. We used these variables and their interactions to predict how helpful participants found each reaction and how likely they would be to stay in the hotel (each mean-centered).

Predicting the helpfulness of each description, as we hypothesized, there was an emotionality × condition interaction ($\gamma = .04$, $t(7,796) = 3.76$, $p < .001$). Greater emotionality predicted greater helpfulness for participants given a hedonic motive ($\gamma = .04$, $t(7,796) = 2.62$, $p = .009$) but backfired for those given a utilitarian motive ($\gamma = -.04$, $t(7,796) = 2.70$, $p = .007$).

We replicated these results when predicting participants' likelihood of staying at the hotel. There was an emotionality × condition interaction ($\gamma = .05$, $t(7,796) = 4.64$, $p < .001$). Greater emotionality predicted greater likelihood for participants given a hedonic motive ($\gamma = .05$, $t(7,796) = 3.23$, $p = .001$) but backfired for those given a utilitarian motive ($\gamma = -.05$, $t(7,796) = 3.33$, $p = .001$). Together, we replicate the previous results while holding the product constant and manipulating only participants' hedonic versus utilitarian motive.

Study 4

Thus far, we have established the effects of emotional content on judgments of the review and corresponding product. Next, we test the proposed conceptual model regarding the underlying mechanism. This model hypothesizes the following: (1) Readers enter the review venue with specific expectations of the level of emotionality they will read, and these expectations are likely to differ for hedonic versus utilitarian products (H_{2a}). (2) Providing a level of emotionality that violates these expectations is likely to elicit surprise and the impression that there is something unusual or odd about the review (H_{2b}; Van Kleef et al. 2011). This experience is likely to prompt an attribution process whereby readers assess the extent to which the reviewers' unusual reactions reflect something about the product itself (Hastie 1984; Jones and Nisbett 1972; Weiner 1985). We propose that, rather than overturn their expectations for a product category based on a single review, this attribution process leads consumers to (3) put less trust in the review (H_{3a} and H_{3b}). This means readers will then (4a) find the review relatively unhelpful (H_{3a}) and (4b) be less favorable toward the product itself (H_{3b}; for an illustration of the process, see Figure 2). We test this model in the current experiment.

[8] Drawing on pilot testing, we did not include seven adjectives that provided a very mild positive reaction ("okay," "adequate," "satisfactory," "neutral," "acceptable," "reasonable," and "agreeable") and tended to be generally unhelpful when describing different products. Indeed, given that participants were expecting rather positive reactions, these adjectives imply relatively little enthusiasm and thus led pilot participants to deduce that the reviewer was relatively less pleased with the products. The adjectives "pro" and "healthy" could not easily be applied to hotels and thus were also not included.

Method

Participants. Participants were recruited via MTurk (N = 298; $Range_{age}$ = 20 to 73 years old, M_{age} = 38 years; 48% male, 52% female).

Procedure: experimental manipulation. Participants were shown a single product review and asked to put themselves in the mindset of someone interested in buying the corresponding product. Four reviews were of hedonic products (two music reviews and two movie reviews) and four were of utilitarian products (two microwave reviews and two blender reviews).

To experimentally manipulate the emotionality of the review, we constructed a high- and low-emotionality review for each product (M_{length} = 70 words). For instance, whereas the high-emotionality movie review began by stating, "This is an amazing movie and it was enjoyable to watch," the low-emotionality review began by stating, "This is a perfect movie and it was beneficial to watch." Although these sentences are the same length and structure, they differ greatly in their emotionality (6.68 vs. 4.14 out of 9.00, respectively). We also ensured that the reviews were similar in positive extremity. The previous sentences exemplify this, as both imply a very similar degree of positive extremity (3.50 vs. 3.60 out of 4.50, respectively). Paired t-tests demonstrated that the implied extremity did not differ between the hedonic products (M = 3.41) versus utilitarian products (M = 3.45; t(3) = .56, p = .62), but the implied emotionality did for the hedonic products (M = 7.00) versus utilitarian products (M = 4.18; t(3) = 127.53, $p < .001$).

Participants were shown one product review in a 2 (product type: hedonic or utilitarian) × 2 (review emotionality: high or low emotionality) fully between-subjects design. Results were similar when we analyzed the different products separately (e.g., blenders vs. movies or blenders vs. music), and thus we collapsed across the specific products.

Procedure: reactions to reviews. After reading the review, participants indicated how surprising and odd they found the review (1 = "not at all," and 7 = "very"; M = 3.11, SD = 1.87). They were then asked the extent to which they trusted the review. Specifically, following the conceptualization of trust from previous work (Doney and Cannon 1997; Ganesan 1994), we asked participants to indicate the extent to which they believed the opinion expressed in the review was one that they could rely on for their decision making (1 = "not at all," and 7 = "very much so"; M = 4.72, SD = 1.38). They then indicated how impactful the review was by answering how helpful it was for deciding whether they would buy the product (1 = "not at all helpful," and 7 = "very helpful"; M = 4.64, SD = 1.56). We then assessed their favorability toward the product itself by asking them how likely they would be to purchase that particular product after reading the review (1 = "not at all likely," and 7 = "very likely"; M = 4.31, SD = 1.65). To assess the specificity of the effect of trust, we controlled for the possibility that consumers found a review less impactful simply because they developed a general negative disposition toward the reviewer (i.e., a halo effect; Thorndike 1920). We therefore asked participants how likable they thought the reviewer was (1 = "very dislikable," and 7 = "very likable"; M = 5.03, SD = 1.31).

Procedure: expectations manipulation check. To measure the level of emotion they had expected, we provided participants with a checklist of nearly all the positive EL adjectives and asked them to select two to four adjectives that they expected for a very good product of the type they read about (e.g., movie, blender).[9] This provided a manipulation check for whether the reviews violated participants' expectations for the emotion they would read about. We hypothesized that participants would select more emotional adjectives for hedonic products but less emotional adjectives for utilitarian products. Most importantly, we hypothesized that there would be a larger discrepancy between expected emotion and the actual emotion expressed in a review for those participants who received high- (vs. low-) emotion reviews for utilitarian products.

Results

Manipulation check. We conducted a 2 × 2 analysis of variance (ANOVA) predicting expectations. As we anticipated, participants expected more emotional reviews for hedonic products (M = 5.96, SD = .67) and less emotional reviews for utilitarian products (M = 4.61, SD = .78; F(1, 294) = 252.13, $p < .001$). These expectations were not moderated by whether participants had received a high- or low-emotion review (F(1, 294) = .48, p = .49). These results also replicated in a separate study in which participants did not see any reviews (see the Web Appendix).

For each participant, we then calculated a difference score between expected and actual emotion expressed in each review. As evidence that the reviews violated participants' expectations, there was a larger discrepancy between the expected and actual emotion for high-emotion (M = 2.45, SD = .77) versus low-emotion (M = −.33, SD = .80) reviews of utilitarian products (testing difference in magnitude [i.e., removing negative sign from low-emotion reviews]: t(147) = 16.67, $p < .001$). However, high-emotion reviews (M = .89, SD = .61) were less discrepant than low-emotion reviews (M = −1.80, SD = .72) for hedonic products (t(147) = 8.34, $p < .001$).[10]

Primary analyses. To further examine whether the reviews violated participants' expectations, we investigated whether the emotionality of the review was related to how surprising and

[9] We removed the term "very good" from the list given that it is the term we used to describe the kind of product they should think of. We did not want participants to simply restate this as their response.

[10] Using these discrepancy scores in the mediation models for this study replicates the results reported subsequently. We provide the results without the discrepancy scores given their ease of comprehension.

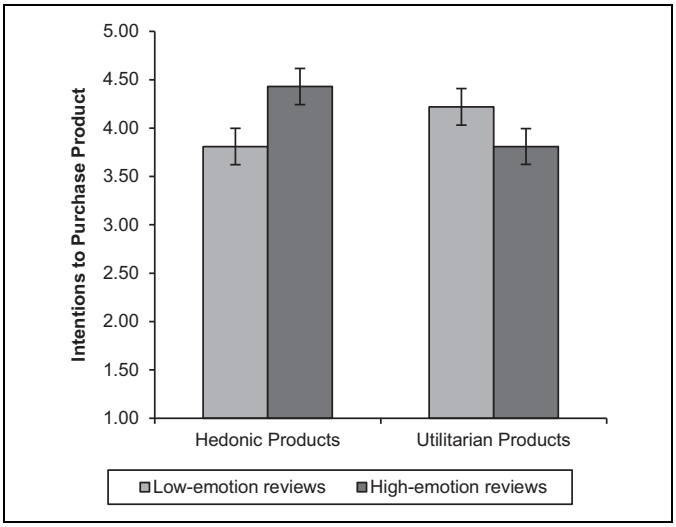

Figure 1. Intentions to purchase product based on product type and review emotionality (Study 4).

Notes: Error bars represent ± 1 standard error of the mean.

odd consumers found the review. We used the same 2 × 2 ANOVA and, as hypothesized, there was a significant emotionality × product type interaction ($F(1, 294) = 33.93$, $p < .001$). For hedonic products, high-emotion reviews were less surprising ($M = 2.67$) than low-emotion reviews ($M = 3.82$; $F(1, 294) = 15.88$, $p < .001$). Conversely, high-emotion reviews backfired for utilitarian products and were more surprising ($M = 3.59$) than low-emotion reviews ($M = 2.36$; $F(1, 294) = 18.09$, $p < .001$).

We conducted this same ANOVA with mistrust in the review as the dependent variable (trust reverse-coded). There was a significant emotionality × product type interaction ($F(1, 294) = 12.09$, $p < .001$). For hedonic products, high-emotion reviews led to less mistrust ($M = 3.09$) than low-emotion reviews ($M = 3.61$; $F(1, 294) = 5.32$, $p = .02$). For utilitarian products, however, high-emotion reviews led to greater mistrust ($M = 3.49$) than low-emotion reviews ($M = 2.90$; $F(1, 294) = 6.82$, $p = .009$).

We found these same results predicting review helpfulness. There was a significant emotionality × product type interaction ($F(1, 294) = 9.85$, $p = .002$). For hedonic products, high-emotion reviews were more helpful ($M = 4.81$) than low-emotion reviews ($M = 4.27$; $F(1, 294) = 4.61$, $p = .03$). For utilitarian products, high-emotion reviews backfired and were less helpful ($M = 4.45$) than low-emotion reviews ($M = 5.03$; $F(1, 294) = 5.26$, $p = .02$).

Finally, for intentions for purchasing the product, there was a significant emotionality × product type interaction ($F(1, 294) = 10.03$, $p = .002$; see Figure 1). For hedonic products, high-emotion reviews led to higher intentions to purchase the product ($M = 4.43$) than low-emotion reviews ($M = 3.81$; $F(1, 294) = 5.40$, $p = .02$). For utilitarian products, high-emotion reviews backfired and led to lower intentions to purchase the product ($M = 4.22$) than low-emotion reviews ($M = 4.80$; $F(1, 294) = 4.64$, $p = .03$).

Mediation. We tested the proposed conceptual model using the PROCESS package (Hayes 2017) and two moderated serial mediation models (Model 8; see Web Appendix for details). Specifically, the effect of emotionality on surprise should depend on whether the product is hedonic or utilitarian, which then leads readers to mistrust the review, which then affects the judged helpfulness of the review and readers' purchase intentions. In the models, we also controlled for liking of the reviewer (for full results, see Web Appendix).

To predict review helpfulness, we used 5,000 bootstrapped samples and found that a 95% confidence interval of the indirect effect did not include zero for either the hedonic products (.03, .14) or the utilitarian products (−.15, −.03) (see Figure W2 in Web Appendix). To predict participants' intentions for purchasing the product, we used the same approach and found that a 95% confidence interval of the indirect effect did not include zero for either the hedonic products (.03, .16) or the utilitarian products (−.16, −.03) (see Figure 2). We also report alternative model specifications in the Web Appendix, which indicate that the mediators cannot be reversed such that mistrust comes before surprise.

Discussion

This experiment provided evidence for our full conceptual model for when and why emotionality backfires. Readers enter the review context with specific expectations (H_{2a}). When reviewers' emotionality is at odds with these expectations, readers are surprised and find the review odd (H_{2b}), attribute the unusual reactions to the review, and thereby discount the review's helpfulness (H_{3a}). As a result, they express lower intentions to purchase the corresponding product (H_{3b}).

Study 5

The previous studies demonstrate that emotional content is an important facet of a review due in part to its effect on readers' trust in a review. In Study 5, we go a step further and manipulate the trust consumers can place in a review by increasing the credibility of the reviewer. Prior research has indicated that greater credibility of an individual is associated with others being more willing to rely on that person for information (Gilly et al. 1998; Petty and Wegener 1998). Succinctly, by manipulating the credibility of the reviewer, we are attempting to demonstrate the causal effect of trust by lessening consumers' ability to attribute the emotionality expressed in the review to the reviewer's strangeness.

Websites often establish reviewers' credentials by providing information that they are expert reviewers. Yelp, for instance, presents this expertise information as "a mark of trust" ("Yelp Elite Squad"; https://www.yelp.com/elite). To establish the reviewer as a credible source and therefore one that can be relied on, we manipulated the perceived expertise of the reviewer. In the language of previous research on trust (Doney and Cannon 1997; Ganesan 1994), we aimed to increase trust in

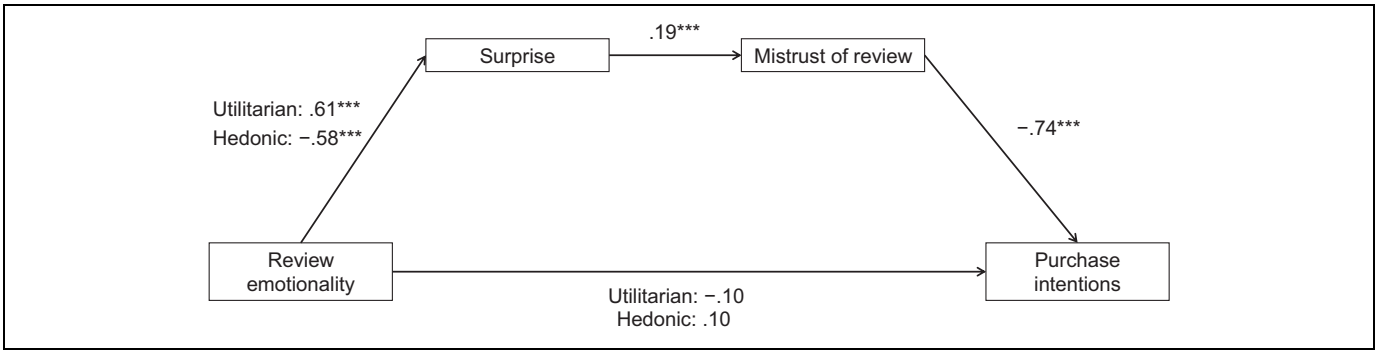

Figure 2. Moderated serial mediation model showing pathway between review emotionality and purchase intentions (Study 4).
***$p \leq .001$.

the review by enhancing the credibility of the reviewer (i.e., the reviewer's perceived effectiveness within the product domain).

To induce perceptions of expertise, we informed participants that the reactions they were reading came from highly regarded experts. It is likely more difficult to make the attribution that the review is strange if the reviewer is perceived to have a great deal of expertise. Thus, we hypothesized that the backfiring effect of emotionality would be attenuated and the expert's reactions would be trusted to a greater extent (H_{4a}). Take, for instance, the experienced carpenter who describes a hammer as "amazing" and "wonderful." This expert's unusual emotionality may be justified as the expert having experienced a truly remarkable tool—one that clearly stands out from the others. Thus, we aimed to not only increase the overall trust participants had in the review (i.e., a main effect of expertise) but also specifically bolster the trust readers have for an unexpected emotional reaction (i.e., an emotionality × product type × expertise interaction).

In the current experiment, we also returned to the approach we used in Study 3, whereby we presented participants with one adjective at a time and asked them to judge the trustworthiness of each adjective. Thus, we did not need to rely on constructed reviews that bundled the adjectives together into an average but instead could assess the effect of emotionality as a natural continuum across the adjectives.

Method

Participants. Participants were recruited via MTurk (N = 202; $Range_{age}$ = 19 to 74 years old, M_{age} = 36 years; 44% male, 55% female, 1% chose not to identify their gender).

Procedure. Participants were instructed that they would see separate reactions to a product from a reviewer and that they should indicate the extent to which they trusted this reaction. Half of the participants were told that the reactions were to a rock and roll music album (hedonic product condition), whereas the other half were told that the reactions were to a book on how to program a computer (utilitarian product condition).

Before seeing the reviewer's reactions, half of the participants were told the reactions came from an anonymous Amazon reviewer (unknown expertise condition) and the other half were told the reactions came from an expert reviewer (high expertise condition). Participants in the high-expertise hedonic product condition (music album) were told that the reviewer was "an expert from the best-selling music magazine *Rolling Stone* who has written for that magazine for 20 years." Those in the utilitarian product condition (computer programming book) were told that the reviewer was "an expert from the best-selling technology magazine *Wired* who has written for that magazine for 20 years." The design was a 2 (product type: hedonic or utilitarian) × 2 (expertise: unknown or high) between-subjects design.

Participants were then instructed to judge the same positive EL adjectives from Study 3 for the extent to which they would "question or have doubts about—in other words *trust*—this reaction" (1 = "I would not question at all," and 7 = "very questionable"; M = 3.41, SD = 1.88).

Results and Discussion

We used mixed modeling and treated both participants and adjectives as random factors. We effects-coded the product conditions (hedonic: 1, utilitarian: −1) and expertise conditions (expert: 1, anonymous: −1). We then included the normative positive extremity and emotionality of each adjective (each mean-centered) and allowed these variables to interact with the condition variables. We predicted the extent to which participants trusted each reaction (how questionable they found each reaction reverse-coded; mean-centered).

The source manipulation was successful: participants trusted the reactions of experts more than those of anonymous reviewers ($\gamma = .26$, $t(198) = 2.88$, $p = .004$). Most important was the hypothesized three-way interaction between emotionality, product type, and reviewer expertise ($\gamma = -.04$, $t(7{,}870) = 3.52$, $p < .001$; see Figure 3). For the unknown expertise condition, we replicated the emotionality × product interaction ($\gamma = .24$, $t(7{,}870) = 13.10$, $p < .001$). More emotional reactions to a hedonic product led to greater trust ($\gamma = .23$, $t(7{,}870) = 9.38$, $p < .001$); for utilitarian products, however, greater

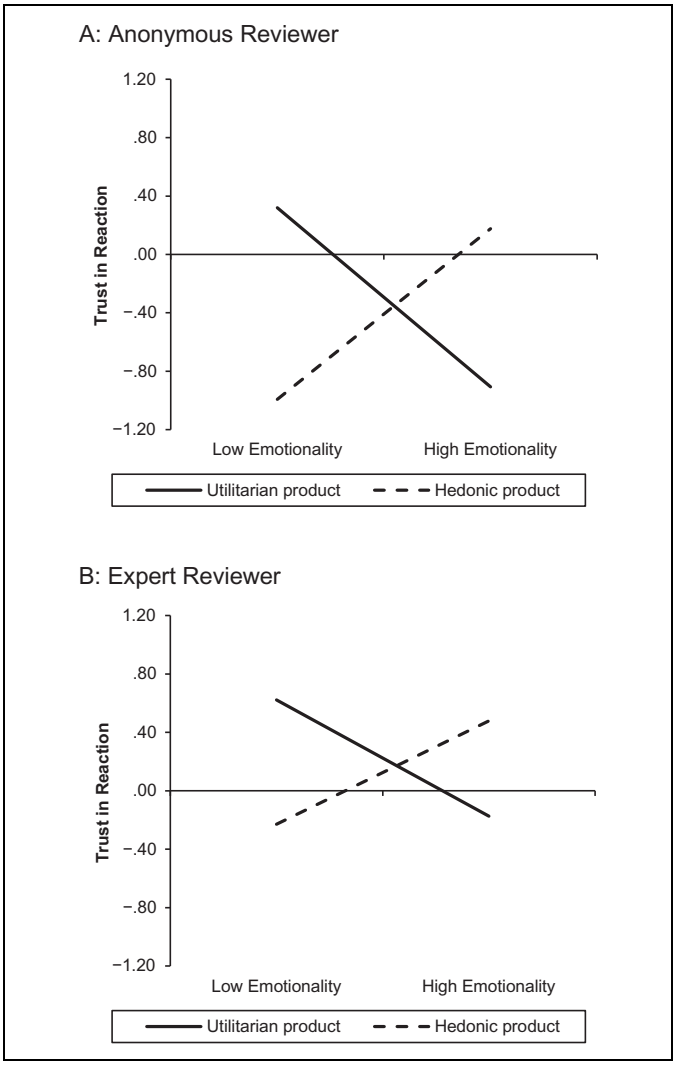

Figure 3. Trust in reaction as a function of adjective emotionality, product type, and reviewer trustworthiness (Study 5).
Notes: Values on the x-axis represent two standard deviations above and below the mean on emotionality.

emotionality was less trusted ($\gamma = -.24$, $t(7,870) = 9.16$, $p < .001$). A similar pattern occurred for expert reviewers, but as indicated by the three-way interaction, the emotionality × product type interaction was significantly attenuated ($\gamma = .15$, $t(7,870) = 8.59$, $p < .001$). Participants were relatively more trusting of the experts' reaction to a hedonic product if it was more emotional ($\gamma = .14$, $t(7,870) = 5.74$, $p < .001$), but as the relatively smaller coefficient indicates, this was attenuated relative to the unknown expertise condition. There was a parallel attenuation for the utilitarian products ($\gamma = -.15$, $t(7,870) = 6.39$, $p < .001$).

This study provided experimental evidence in support of our hypothesis regarding trust's role in accepting others' emotional reactions. Experts were more trusted and their emotional reactions more readily accepted, even when that emotionality was unexpected (H_{4a}). Thus, a carpenter with 30 years of experience who expresses how "amazing" and "wonderful" a hammer is, despite the unusual nature of these reactions, will be trusted to a greater extent.

Although expertise is only one facet that can contribute to the perceptions of trustworthiness of a reviewer, it is one of particular interest for online reviews given that companies such as Yelp provide such information to establish trust in a reviewer ("Yelp Elite Squad"). Nevertheless, the expertise manipulation significantly attenuated but did not eliminate the effects of emotionality. Trust consists of credibility as well as benevolence (e.g., honesty). We directly manipulated credibility, but not benevolence; thus, it is possible that consumers still had reservations in completely trusting the expert's reactions because the reviewer's benevolence was unknown.

Given that an overwhelming majority of online reviews are anonymous, these results also indicate why emotionality can backfire with relative frequency in the real world. However, reviewers may be able to take steps to counter this possibility—the very question we investigate in the next study by returning to the real-world online reviews from Study 1.

Study 6: Further Analysis of Amazon Reviews

Having established the importance of expectations and trust, we returned to the real-world Amazon data and aimed to demonstrate that conceptually similar results occur naturalistically. Specifically, any steps that reviewers can take to increase readers' willingness to rely on (i.e., trust) their review should attenuate the effects of unexpected emotionality.

One approach reviewers could use is to explain their reactions so as to improve readers' understanding (Malle 2004; Petty and Wegener 1991). A reviewer who simply described a printer as "amazing" without offering any reasoning for this claim is likely to be considered relatively unhelpful. Another reviewer, however, might state that a printer was "amazing" because of all the options it had. "Because" signals that reviewers are explaining their evaluation. Providing more concrete reasons for their emotions may help the reader understand the reaction and therefore dampen the backfiring effects of emotionality. Whereas prior research has investigated whether explanations for reactions versus actions are relatively more helpful when reviewing hedonic versus utilitarian products (Moore 2015), this study investigates whether including an explanation (or not) helps lessen the effect of discrepant emotionality (H_{4b}).

Method

Data. Using the same 46,832 reviews from Study 1, we searched each review for the words "because," "therefore," "thus," "hence," "consequently," "ergo," and "as a result." A review was categorized as likely to have an explanation if it contained one of these words (9,905 reviews; 21% of the total) and less likely if it did not (36,927 reviews; 79%).

Results and Discussion

We used the same regression equation as in Study 1 but also included the effects-coded explanation variable and all its interactions. As would be expected, there was an overall effect such that explaining one's reactions was more helpful (B = .02, t(46,820) = 7.65, $p < .001$). There was also the predicted interaction between review emotionality, product type, and whether the review contained an explanation (B = −.01, t(46,820) = 2.96, $p = .003$; see Figure W3 in the Web Appendix). For reviews without an explanation, there was the emotionality × product type interaction (B = .02, t(46,820) = 8.28, $p < .001$) such that emotional reactions were more helpful for hedonic products (B = .02, t(46,820) = 4.63, $p < .001$) but backfired for utilitarian products (B = −.03, t(46,820) = 7.07, $p < .001$). For reviews with an explanation, however, this interaction was not significant (B = .004, t(46,820) = .72, $p = .47$). Thus, unlike the manipulation of source expertise in the previous study, explanatory language eliminated the diverging effects of emotionality (H_{4b}).

Study 7

The final two studies demonstrate additional consequences of discrepant emotionality in reviews. Study 7 demonstrates the consequences for actual product choice. We use the same reviews as Study 4, but generalize our findings to a within-subjects design in which participants were required to choose a product to potentially win that product in a lottery.

Method

Participants. Participants were 209 undergraduate business students given class credit for their participation ($Range_{age}$ = 18 to 28 years old, M_{age} = 20 years; 49% male, 51% female).

Procedure. Each participant came into the laboratory and read four reviews from Study 4: two high-emotional and two low-emotional reviews, two of which were of hedonic products and two of utilitarian products. Which product (e.g., either the music or the movie) was high or low in emotionality for each product type differed between subjects. In other words, half of the participants received the high-emotionality microwave and movie reviews and low-emotionality blender and music reviews; the other half received the opposite emotionality for those products. Reviews were presented in random order. Results were similar across counterbalancing conditions and therefore collapsed together. Thus, this was a 2 (product type: hedonic or utilitarian) × 2 (review emotionality: high or low emotionality) design.

After participants read each review, we asked them to rate their surprise, trust in the review, the review's helpfulness, and their buying intentions. These results replicate those in Study 4 and are reported in the Web Appendix. Most importantly, after reading all the reviews, participants were asked to select one hedonic and one utilitarian product to have a chance to win in a lottery.

Results and Discussion

We used logistic mixed modeling with participants as random factors. We predicted whether participants chose the product reviewed with high emotion (coded as 1) or the product with low emotion (0) when product type was set to 0 for either hedonic versus utilitarian products. We are interested in the intercept of the model when the product type variable is set at 0 for each product type, as this indicates whether participants selected the product described with high (vs. low) emotion above chance levels. For hedonic products, participants were significantly more likely to choose the product described with high emotion compared with chance (65% chance; Z = 3.77, $p < .001$). For utilitarian products, however, they were significantly less likely to choose the product described with high emotion compared with chance (38% chance; Z = 3.03, $p = .002$).

Study 8

Whereas Study 7 demonstrated additional consequences at the level of individual choices, Study 8 aimed to demonstrate a real-world consequence at a more macro level. Word-of-mouth research has indicated that emotional content is more likely to become popular, spread, and garner greater attention compared with unemotional content (Berger and Milkman 2012). However, the current research suggests this may not always be the case. Emotionality backfires for utilitarian products and therefore may be less likely to become popular in an online review environment. As a result, fewer consumers may read a given review and, in that way, such information is less likely to spread to new people.

We returned to Amazon and analyzed those reviews that Amazon had identified as particularly impactful and popular, as indexed by their being featured on the front page of the product. Does the emotionality expressed in a review predict which reviews "catch on" and make it to a product's front page?

Method

Data. The Amazon data we utilized in Study 1 did not signify the order in which the reviews appeared on the product pages; we therefore returned to Amazon and extracted the positive reviews and their order, as ranked by Amazon for a random subset of approximately half of the products from Study 1. Beginning with the front page of each product, we extracted these reviews and the order in which they appeared in June 2016—ten years after the last review was written in Study 1. This provided a snapshot of the most popular reviews as of that date. We were left with 109 utilitarian products ($N_{reviews}$ = 30,824) and 125 hedonic products ($N_{reviews}$ = 98,114), for a total of 128,938 reviews that had been judged 548,355 times by visiting consumers. Because these reviews include those that had been written since 2006, the sample contained more reviews than the sample from Study 1.

Results

Replicating Study 1's results. As we detail in the Web Appendix, we fully replicated the results of Study 1 using just those reviews written since the original sample was obtained (i.e., since 2006; N = 29,323): greater positive emotionality predicted all the more positive star ratings for reviewers regardless of product type, but this backfired for readers for utilitarian products ($ps < .001$). This replicates the results from Study 1 with an entirely new sample of reviews, reviewers, and readers. It also replicates the findings after a ten-year span, indicating that the results from Study 1 generalize across time.

Predicting the top reviews. We then turned to predicting the most popular reviews for each product for all 128,938 available reviews. When consumers ask Amazon to list the top reviews for a given product, Amazon provides ten reviews per page. Thus, we identified the most popular reviews as the ten reviews on this first page (coded as 1) versus the reviews not on this first page (0; the results also hold with alternate numbers of reviews; see the Web Appendix). We used the same variables as in the previous analyses but used logistic regression to predict whether a review made it to the front page.

As we hypothesized, there was an emotionality × product type interaction (B = .15, $\chi^2(1) = 17.34$, $p < .001$; see Figure W4 in the Web Appendix). For hedonic products, the more emotional the review, the greater the probability that it would rise to the top and be displayed on the product's front page (B = .15, $\chi^2(1) = 10.19$, $p = .001$). However, for utilitarian products this emotionality backfired, such that these reviews were less likely to rise to the top and thus be displayed on the product's front page (B = −.16, $\chi^2(1) = 7.64$, $p = .006$).

General Discussion

Across five laboratory experiments and two field samples using 100,000 real-world reviews and 500 products, we examined the effects of emotional content in online reviews. This research aimed to build on previous work in the consumer review and word-of-mouth domains to demonstrate when and why positive emotional content can backfire (for a summary of all results, see Table 3). This work contributes to the existing literature in three major ways.

First, whereas researchers, marketers, and consumers alike tend to believe that amplifying emotionality produces greater impact, we demonstrate the conditions under which this occurs versus when emotionality backfires. Indeed, work within online reviews has tended not to examine the possible backfiring of emotionality.

Second, we detail a novel process model for why this emotionality backfires. We propose a model whereby readers enter the review context with specific expectations for the review's emotional content. When those expectations are violated, readers find the review surprising and odd, which leads them make an attribution that the review is untrustworthy. This leads readers to disregard the positivity of the review and thus become less favorable toward the product compared with if they had used that positivity for their product decision.

Third, in detailing this process, we highlight and systematically investigate a mediator that has been identified as pivotal but generally overlooked within the literature: trust. Despite its clear implications for online reviews, the trust readers have in a given review has been relatively understudied (King, Racherla, and Bush 2014; cf. Hair and Ozcan 2018; Packard, Gershoff, and Wooten 2016; Racherla, Mandviwalla, and Connolly 2012). We show that the content of a review in conjunction with the product being written about affects the trust readers have in a given review. This trust, in turn, affects the review's final impact. Moreover, we demonstrate the causal effect of trust through its manipulation. As such, this research builds on the nascent literature on trust in consumer reviews and helps answer the call to better understand its explicit role in the effectiveness of online word of mouth (King, Racherla, and Bush 2014).

Understanding when and why emotional content backfired also enabled us to predict which reviews became the most popular and went viral in the online environment. Previous research has demonstrated that more emotional content is more likely to spread (Berger and Milkman 2012). We investigate a distinct context but nevertheless show conditions under which emotional content is not more likely to spread. Emotional content was less likely to become popular for utilitarian products. The anonymous nature of online reviews, in conjunction with the explicit expectations readers have for a given product, provide important differences from previous work. Indeed, prior work has focused on newspaper articles from a highly reputable source (*The New York Times*; Berger and Milkman 2012) wherein trust in the validity of emotional content is less likely to be an issue.

Research has shown conditions in which reviewers' and readers' perspectives appear to align with each other (Moore 2015) but also those in which they appear to be discrepant (Packard and Berger 2017). We demonstrate a situation in which these perspectives diverge to negative ends. Prior research on emotion has indicated that consumers believe that shifting toward greater emotionality should be more persuasive and that they actively use emotion to persuade others regardless of product type (Rocklage, Rucker, and Nordgren 2018b). Moreover, the current set of studies show that the more emotional reviewers were in their reviews, the more positive they were toward their product. Thus, there is an intriguing irony: reviewers' own emotionality was related to greater support of a product, and they believed that this emotionality should be more impactful to readers—yet this emotionality can backfire.

The current work focused on the effects of emotionality in positive reviews given that positive reviews make up approximately 80% of all reviews (Filippas, Horton, and Golden 2018; Jindal and Liu 2008). However, future research could also investigate emotionality in negative reviews. It is possible that a very different process occurs for these reviews. The conceptual model we tested involves consumers' expectations. Expressing how "delightful," "pleasant," or "amazing" blenders are, for instance, is rather unexpected and therefore

Table 3. Effects of Emotionality by Study.

Study 1: Reviewer and Reader Effects on Amazon (N = 46,832 Reviews)	
Final review rating (reviewers)	
Emotionality × Product type	$B = .01$, $t(46{,}826) = 1.63$, $p = .104$
Effect across all products	$B = .04$, $t(46{,}826) = 5.39$, $p < .001$
Proportion finding review helpful (readers)	
Emotionality × Product type	$B = .02$, $t(46{,}826) = 7.85$, $p < .001$
Hedonic products	$B = .01$, $t(46{,}826) = 3.85$, $p < .001$
Utilitarian products	$B = -.02$, $t(46{,}826) = 7.35$, $p < .001$
Study 2: Effects on Product Favorability (N = 200 Reviewers; 242 Readers)	
Product favorability (reviewers)	
Emotionality × Product type	$B = .01$, $t(194) = .28$, $p = .78$
Effect across product type	$B = .10$, $t(194) = 1.98$, $p = .05$
Helpfulness (readers)	
Emotionality × Product type	$\gamma = .13$, $t(181.29) = 3.56$, $p < .001$
Hedonic products	$\gamma = .13$, $t(181.93) = 2.57$, $p = .01$
Utilitarian products	$\gamma = -.14$, $t(180.79) = 2.47$, $p = .01$
Product favorability (readers)	
Emotionality × Product type	$\gamma = .63$, $t(183.25) = 8.52$, $p < .001$
Hedonic products	$\gamma = .19$, $t(184.16) = 3.92$, $p < .001$
Utilitarian products	$\gamma = -.11$, $t(183.18) = 2.07$, $p = .04$
Study 3: Holding Product Constant but Manipulating Hedonic Motive (N = 200 Readers)	
Helpfulness	
Emotionality × Motive	$\gamma = .04$, $t(7{,}796) = 3.76$, $p < .001$
Hedonic products	$\gamma = .04$, $t(7{,}796) = 2.62$, $p = .009$
Utilitarian products	$\gamma = -.04$, $t(7{,}796) = 2.70$, $p = .007$
Purchase intentions	
Emotionality × Motive	$\gamma = .05$, $t(7{,}796) = 4.64$, $p < .001$
Hedonic products	$\gamma = .05$, $t(7{,}796) = 3.23$, $p = .001$
Utilitarian products	$\gamma = -.05$, $t(7{,}796) = 3.33$, $p = .001$
Study 4 Pretest (Web Appendix): Expected Level of Emotion by Product Type (N = 55 Readers)	
Expected level of emotion	
Hedonic products	$M = 6.08$
Utilitarian products	$M = 4.34$
Test of difference	$t(54) = 19.83$, $p < .001$
Study 4: Testing the Full Conceptual Model (N = 298 Readers)	
Expected level of emotion	
Hedonic products	$M = 5.96$
Utilitarian products	$M = 4.61$
Test of difference	$F(1, 294) = 252.13$, $p < .001$
Surprise/oddity (high vs. low emotion)	
Emotionality × Product type	$F(1, 294) = 33.93$, $p < .001$
Hedonic products	$M = 2.67$ vs. 3.82; $F(1, 294) = 15.88$, $p < .001$
Utilitarian products	$M = 3.59$ vs. 2.36; $F(1, 294) = 18.09$, $p < .001$
Mistrust (high vs. low emotion)	
Emotionality × Product type	$F(1, 294) = 12.09$, $p < .001$
Hedonic products	$M = 3.09$ vs. 3.61; $F(1, 294) = 5.32$, $p = .02$
Utilitarian products	$M = 3.49$ vs. 2.90; $F(1, 294) = 6.82$, $p = .009$
Helpfulness (high vs. low emotion)	
Emotionality × Product type	$F(1, 294) = 9.85$, $p = .002$
Hedonic products	$M = 4.81$ vs. 4.27; $F(1, 294) = 4.61$, $p = .03$
Utilitarian products	$M = 4.45$ vs. 5.03; $F(1, 294) = 5.26$, $p = .02$
Purchase intentions (high vs. low emotion)	
Emotionality × Product type	$F(1, 294) = 10.03$, $p = .002$
Hedonic products	$M = 4.43$ vs. 3.81; $F(1, 294) = 5.40$, $p = .02$
Utilitarian products	$M = 4.22$ vs. 4.80; $F(1, 294) = 4.64$, $p = .03$
Indirect effect on helpfulness [95% CIs]	
Hedonic products	[.03, .14]
Utilitarian products	[−.15, −.03]
Indirect effect on purchasing [95% CIs]	
Hedonic products	[.03, .16]
Utilitarian products	[−.16, −.03]
Study 5: Directly Manipulating Trust (N = 202 Readers)	
Trust in review	
Emotionality × Product type × Expertise	$\gamma = -.04$, $t(7{,}870) = 3.52$, $p < .001$
Anonymous reviewer condition	
Emotionality × Product type	$\gamma = .24$, $t(7{,}870) = 13.10$, $p < .001$
Hedonic products	$\gamma = .23$, $t(7{,}870) = 9.38$, $p < .001$
Utilitarian products	$\gamma = -.24$, $t(7{,}870) = 9.16$, $p < .001$
Expert reviewer condition	
Emotionality × Product type	$\gamma = .15$, $t(7{,}870) = 8.59$, $p < .001$
Hedonic products	$\gamma = .14$, $t(7{,}870) = 5.74$, $p < .001$
Utilitarian products	$\gamma = -.15$, $t(7{,}870) = 6.39$, $p < .001$
Study 6: Moderating by Presence of Explanation (N = 46,832 Amazon Reviews)	
Proportion finding review helpful	
Emotionality × Product type × Explanation	$B = -.01$, $t(46{,}820) = 2.96$, $p = .003$
No explanation in review	
Emotionality × Product type	$B = .02$, $t(46{,}820) = 8.28$, $p < .001$
Hedonic products	$B = .02$, $t(46{,}820) = 4.63$, $p < .001$
Utilitarian products	$B = -.03$, $t(46{,}820) = 7.07$, $p < .001$
Explanation in review	
Emotionality × Product type	$B = .004$, $t(46{,}820) = .72$, $p = .47$
Study 7: Predicting Actual Product Choice (N = 209 Readers)	
Surprise/oddity (high vs. low emotion)	
Emotionality × Product type	$F(1, 208) = 115.69$, $p < .001$
Hedonic products	$M = 2.44$ vs. 3.58; $F(1, 208) = 51.72$, $p < .001$
Utilitarian products	$M = 3.87$ vs. 2.58; $F(1, 208) = 66.98$, $p < .001$
Mistrust (high vs. low emotion)	
Emotionality × Product type	$F(1, 208) = 48.96$, $p < .001$
Hedonic products	$M = 3.89$ vs. 4.40; $F(1, 208) = 16.39$, $p < .001$

(continued)

(continued)

Table 3. (continued)

Utilitarian products	$M = 4.68$ vs. 3.86; $F(1, 208) = 43.06$, $p < .001$
Helpfulness (high vs. low emotion)	
Emotionality × Product type	$F(1, 208) = 49.30$, $p < .001$
Hedonic products	$M = 3.91$ vs. 3.42; $F(1, 208) = 11.52$, $p < .001$
Utilitarian products	$M = 3.66$ vs. 4.58; $F(1, 208) = 49.12$, $p < .001$
Purchase intentions (high vs. low emotion)	
Emotionality × Product type	$F(1, 208) = 45.98$, $p < .001$
Hedonic products	$M = 3.79$ vs. 3.27; $F(1, 208) = 15.60$, $p < .001$
Utilitarian products	$M = 3.69$ vs. 4.39; $F(1, 208) = 29.88$, $p < .001$
Product choice (% choosing product that was reviewed with high [vs. low] emotion)	
Hedonic products	65%; $Z = 3.77$, $p < .001$
Utilitarian products	38%; $Z = 3.03$, $p = .002$
Study 8: Predicting Front Page Amazon Reviews (N = 128,938 Reviews)	
Final review rating (reviewers; N = 29,323 reviews)	
Emotionality × Product type	$B = -.01$, $t(29{,}317) = 1.25$, $p = .21$
Effect across all products	$B = .05$, $t(29{,}317) = 6.68$, $p < .001$
Proportion finding review helpful (readers; N = 29,323 reviews)	
Emotionality × Product type	$B = .04$, $t(29{,}317) = 10.31$, $p < .001$
Hedonic products	$B = .04$, $t(29{,}317) = 10.56$, $p < .001$
Utilitarian products	$B = -.03$, $t(29{,}317) = 5.48$, $p < .001$
Probability of review reaching front page (N = 128,938 reviews)	
Emotionality × Product type	$B = .15$, $\chi^2(1) = 17.34$, $p < .001$
Hedonic products	$B = .15$, $\chi^2(1) = 10.19$, $p = .001$
Utilitarian products	$B = -.16$, $\chi^2(1) = 7.64$, $p = .006$

surprising and odd for that product. It is possible, though, that consumers expect a very bad utilitarian product to elicit language that indicates frustration, anger, or disappointment. Negative emotionality toward poor utilitarian products may be relatively expected—we can all remember how angering it is to purchase a product that breaks after just a short time or a computer that constantly crashes in the middle of our work. Thus, we do not believe it is straightforward to hypothesize that negative emotionality will produce the same outcomes. We do, however, find this to be an interesting line of research for future work.

From a managerial standpoint, although emotionality toward a product is something businesses may wish to encourage (Batra, Ahuvia, and Bagozzi 2012; Carroll and Ahuvia 2006), this emotionality may need to be tempered for certain products. For instance, businesses commonly ask consumers to tell others how much they "love" their product (e.g., Collins 2014). If that product is a blender, however, firms might spur consumers to instead express how "useful" they found the product. Or, based on our results from Study 6, they may want to ask consumers to write a review that provides concrete explanations for their reactions. Such reviews can have a larger impact on readers and thereby affect sales.

This work also introduces the Evaluative Lexicon (Rocklage and Fazio 2015; Rocklage, Rucker, and Nordgren 2018a) for the purpose of addressing questions of interest to the marketing domain (software available at www.evaluativelexicon.com). The EL allows researchers to capture the valence, extremity, and emotionality of individuals' language in an objective and systematic fashion both under careful experimental control and from real-world sources. Moreover, the EL is comparatively unique in its ability to measure the emotionality of consumers' evaluations per se. Previous research has directly compared the EL with one of the more popular text analysis tools, LIWC (Pennebaker et al. 2015), and has shown that while LIWC measures the positivity of individuals' language, it appears not to capture its emotionality (Rocklage, Rucker, and Nordgren 2018a). Moreover, the EL measures have also been shown to be distinct from arousal (Rocklage, Rucker, and Nordgren 2018a). Given the EL's unique capability to measure emotionality and extremity, it is our hope that the current work encourages others to utilize the EL as well.

Acknowledgments

The authors thank Derek Rucker for his comments regarding an initial draft of this manuscript. Correspondence concerning this article may be addressed to Matthew Rocklage.

Associate Editor

Vikas Mittal

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

References

Alba, Joseph W. and Elanor F. Williams (2013), "Pleasure Principles: A Review of Research on Hedonic Consumption," *Journal of Consumer Psychology*, 23 (1), 2–18.

Awad, Neveen F. and Arik Ragowsky (2008), "Establishing Trust in Electronic Commerce Through Online Word of Mouth: An Examination Across Genders," *Journal of Management Information Systems*, 24 (4), 101–21.

Ba, Sulin and Paul A. Pavlou (2002), "Evidence of the Effect of Trust Building Technology in Electronic Markets: Price Premiums and Buyer Behavior," *MIS Quarterly*, 26 (3), 243–68.

Baayen, R.H., D.J. Davidson, and D.M. Bates (2008), "Mixed-Effects Modeling with Crossed Random Effects for Subjects and Items," *Journal of Memory and Language*, *Special Issue: Emerging Data Analysis*, 59 (4), 390–412.

Baer, Drake (2014), "How Yelp Encourages Users to Write More Thoughtful Reviews (Even on Mobile)," *Fast Company* (March 10), https://www.fastcompany.com/3027249/how-yelp-

encourages-users-to-write-more-thoughtful-reviews-even-on-mobile.

Batra, Rajeev and Olli T. Ahtola (1991), "Measuring the Hedonic and Utilitarian Sources of Consumer Attitudes," *Marketing Letters*, 2 (2), 159–70.

Batra, Rajeev, Aaron Ahuvia, and Richard P. Bagozzi (2012), "Brand Love," *Journal of Marketing*, 76 (2), 1–16.

Berger, Jonah (2014), "Word of Mouth and Interpersonal Communication: A Review and Directions for Future Research," *Journal of Consumer Psychology*, 24 (4), 586–607.

Berger, Jonah and Katherine L. Milkman (2012), "What Makes Online Content Viral?" *Journal of Marketing Research*, 49 (2), 192–205.

Bujarski, Luke (2017), "Interview: TripAdvisor CEO on How Attractions and Restaurants Fit into Overall Strategy," *Skift* (July 11), https://skift.com/2017/07/11/interview-tripadvisor-ceo-on-how-attractions-and-restaurants-fit-into-overall-strategy/.

Carroll, Barbara A. and Aaron C. Ahuvia (2006), "Some Antecedents and Outcomes of Brand Love," *Marketing Letters*, 17 (2), 79–89.

Chen, Pei-Yu, Samita Dhanasobhon, and Michael D. Smith (2008), "All Reviews Are Not Created Equal: The Disaggregate Impact of Reviews and Reviewers at Amazon.com," SSRN, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=918083.

Chen, Zoey and Nicholas H. Lurie (2013), "Temporal Contiguity and Negativity Bias in the Impact of Online Word of Mouth," *Journal of Marketing Research*, 50 (4), 463–76.

Chevalier, Judith A. and Dina Mayzlin (2006), "The Effect of Word of Mouth on Sales: Online Book Reviews," *Journal of Marketing Research*, 43 (3), 345–54.

Collins, Shawn (2014), "Amazon Wants to Make Every Prime Customer an Affiliate," *Affiliate Marketing Blog* (November 10), http://affiliatetip.com/amazon-wants-make-every-prime-customer-affiliate/.

Crites, Stephen L., Leandre R. Fabrigar, and Richard E. Petty (1994), "Measuring the Affective and Cognitive Properties of Attitudes: Conceptual and Methodological Issues," *Personality and Social Psychology Bulletin*, 20 (6), 619–34.

Danescu-Niculescu-Mizil, Cristian, Gueorgi Kossinets, Jon Kleinberg, and Lillian Lee (2009), "How Opinions Are Received by Online Communities: A Case Study on Amazon.com Helpfulness Votes," in *WWW '09: Proceedings of the 18th International Conference on World Wide Web*. New York: Association for Computing Machinery, 141–50.

De Langhe, Bart, Philip M. Fernbach, and Donald R. Lichtenstein (2016), "Navigating by the Stars: Investigating the Actual and Perceived Validity of Online User Ratings," *Journal of Consumer Research*, 42 (6), 817–33.

Doney, Patricia M. and Joseph P. Cannon (1997), "An Examination of the Nature of Trust in Buyer–Seller Relationships," *Journal of Marketing*, 61 (2), 35–51.

Fabrigar, Leandre R. and Richard E. Petty (1999), "The Role of the Affective and Cognitive Bases of Attitudes in Susceptibility to Affectively and Cognitively Based Persuasion," *Personality and Social Psychology Bulletin*, 25 (3), 363–81.

Fazio, Russell H. and Mark P. Zanna (1981), "Direct Experience and Attitude-Behavior Consistency," in *Advances in Experimental Social Psychology*, L. Berkowitz, ed. New York: Academic Press, 161–202.

Filippas, Apostolos, John J. Horton, and Joseph Golden (2018), "Reputation Inflation," SSRN, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3136473.

Friestad, Marian and Peter Wright (1994), "The Persuasion Knowledge Model: How People Cope with Persuasion Attempts," *Journal of Consumer Research*, 21 (1), 1–31.

Ganesan, Shankar (1994), "Determinants of Long-Term Orientation in Buyer–Seller Relationships," *Journal of Marketing*, 58 (2), 1–19.

Geuens, Maggie, Patrick De Pelsmacker, and Tine Faseur (2011), "Emotional Advertising: Revisiting the Role of Product Category," *Journal of Business Research*, 64 (4), 418–26.

Gilly, Mary C., John L. Graham, Mary F. Wolfinbarger, and Laura J. Yale (1998), "A Dyadic Study of Interpersonal Information Search," *Journal of the Academy of Marketing Science*, 26 (2), 83–100.

Hair, Michael and Timucin Ozcan (2018), "How Reviewers' Use of Profanity Affects Perceived Usefulness of Online Reviews," *Marketing Letters*, 29 (2), 151–63.

Hastie, Reid (1984), "Causes and Effects of Causal Attribution," *Journal of Personality and Social Psychology*, 46 (1), 44–56.

Havlena, William J. and Morris B. Holbrook (1986), "The Varieties of Consumption Experience: Comparing Two Typologies of Emotion in Consumer Behavior," *Journal of Consumer Research*, 13 (3), 394–404.

Hayes, Andrew F. (2017), *Introduction to Mediation, Moderation, and Conditional Process Analysis, Second Edition: A Regression-Based Approach*. New York: Guilford.

Hennig-Thurau, Thorsten, Kevin P. Gwinner, Gianfranco Walsh, and Dwayne D. Gremler (2004), "Electronic Word-of-Mouth via Consumer-Opinion Platforms: What Motivates Consumers to Articulate Themselves on the Internet?" *Journal of Interactive Marketing*, 18 (1), 38–52.

Hirschman, Elizabeth C. and Morris B. Holbrook (1982), "Hedonic Consumption: Emerging Concepts, Methods and Propositions," *Journal of Marketing*, 46 (3), 92–101.

Holbrook, Morris B. and Elizabeth C. Hirschman (1982), "The Experiential Aspects of Consumption: Consumer Fantasies, Feelings, and Fun," *Journal of Consumer Research*, 9 (2), 132–40.

Hung, Iris W. and Robert S. Wyer (2008), "The Impact of Implicit Theories on Responses to Problem-Solving Print Advertisements," *Journal of Consumer Psychology*, 18 (3), 223–35.

Jindal, Nitin and Bing Liu (2008), "Opinion Spam and Analysis," in *WSDM '08: Proceedings of the 2008 International Conference on Web Search and Data Mining*. New York: Association for Computing Machinery, 219–230.

Jones, Edward E. and Richard E. Nisbett (1972), "The Actor and the Observer: Divergent Perceptions of the Causes of Behavior," in *Attribution: Perceiving the Causes of Behavior,* E.E. Jones, D.E. Kanouse, H.H. Kelley, R.E. Nisbett, S. Valins, and B. Weiner, eds. Morristown, NJ: General Learning Press, 79–94.

Jordan, Patrick W. (2000), *Designing Pleasurable Products*. London: Taylor & Francis.

Judd, Charles M., Jacob Westfall, and David A. Kenny (2012), "Treating Stimuli as a Random Factor in Social Psychology: A

New and Comprehensive Solution to a Pervasive but Largely Ignored Problem," *Journal of Personality and Social Psychology*, 103 (1), 54–69.

Khan, Uzma, Ravi Dhar, and Klaus Wertenbroch (2005), "A Behavioral Decision Theory Perspective on Hedonic and Utilitarian Choice," in *Inside Consumption: Consumer Motives, Goals and Desires*, S. Ratenshwar and D.G. Mick, eds. New York: Routledge, 144–65.

King, Robert Allen, Pradeep Racherla, and Victoria D. Bush (2014), "What We Know and Don't Know About Online Word-of-Mouth: A Review and Synthesis of the Literature," *Journal of Interactive Marketing*, 28 (3), 167–83.

Kirmani, Amna and Rui (Juliet) Zhu (2007), "Vigilant Against Manipulation: The Effect of Regulatory Focus on the Use of Persuasion Knowledge," *Journal of Marketing Research*, 44 (4), 688–701.

Kronrod, Ann and Shai Danziger (2013), "'Wii Will Rock You!' The Use and Effect of Figurative Language in Consumer Reviews of Hedonic and Utilitarian Consumption," *Journal of Consumer Research*, 40 (4), 726–39.

Kross, Ethan, Philippe Verduyn, Margaret Boyer, Brittany Drake, Izzy Gainsburg, Brian Vickers, et al. (2019), "Does Counting Emotion Words on Online Social Networks Provide a Window into People's Subjective Experience of Emotion? A Case Study on Facebook," *Emotion*, 19 (1), 97–107.

Ku, Yi-Cheng, Chih-Ping Wei, and Han-Wei Hsiao (2012), "To Whom Should I Listen? Finding Reputable Reviewers in Opinion-Sharing Communities," *Decision Support Systems*, 53 (3), 534–42.

Lakshmanan, Arun and H. Shanker Krishnan (2011), "The Aha! Experience: Insight and Discontinuous Learning in Product Usage," *Journal of Marketing*, 75 (6), 105–23.

Ludwig, Stephan, Ko de Ruyter, Mike Friedman, Elisabeth C. Brüggen, Martin Wetzels, and Gerard Pfann (2013), "More than Words: The Influence of Affective Content and Linguistic Style Matches in Online Reviews on Conversion Rates," *Journal of Marketing*, 77 (1), 87–103.

Malle, Bertram F. (2004), *How the Mind Explains Behavior: Folk Explanations, Meaning, and Social Interaction*. Cambridge, MA: MIT Press.

Moore, Sarah G. (2015), "Attitude Predictability and Helpfulness in Online Reviews: The Role of Explained Actions and Reactions," *Journal of Consumer Research*, 42 (1), 30–44.

Mudambi, Susan M. and David Schuff (2010), "What Makes a Helpful Online Review? A Study of Customer Reviews on Amazon.com," *MIS Quarterly*, 34 (1), 185–200.

Murphy, Rosie (2017), "Local Consumer Review Survey 2017," *BrightLocal* (December 2), https://www.brightlocal.com/research/local-consumer-review-survey-2017/.

Norman, Don (2004), *Emotional Design: Why We Love (or Hate) Everyday Things*. New York: Perseus.

Packard, Grant and Jonah Berger (2017), "How Language Shapes Word of Mouth's Impact," *Journal of Marketing Research*, 54 (4), 572–88.

Packard, Grant, Andrew D. Gershoff, and David B. Wooten (2016), "When Boastful Word of Mouth Helps Versus Hurts Social Perceptions and Persuasion," *Journal of Consumer Research*, 43 (1), 26–43.

Pennebaker, James W., Ryan L. Boyd, Kayla Jordan, and Kate Blackburn (2015), *The Development and Psychometric Properties of LIWC2015*. Austin: University of Texas at Austin.

Petty, Richard E. and Duane T. Wegener (1991), "Thought Systems, Argument Quality, and Persuasion," in *Advances in Social Cognition*, R.S. Wyer and T.K. Srull, eds. Hilldale, NJ: Lawrence Erlbaum Associates, 147–61.

Petty, Richard E. and Duane T. Wegener (1998), "Attitude Change: Multiple Roles for Persuasion Variables," in *The Handbook of Social Psychology*, D.T. Gilbert, S.T. Fiske, and G. Lindzey, eds. New York: McGraw-Hill, 323–90.

Pham, Michel Tuan (1998), "Representativeness, Relevance, and the Use of Feelings in Decision Making," *Journal of Consumer Research*, 25 (2), 144–59.

Pham, Michel Tuan (2007), "Emotion and Rationality: A Critical Review and Interpretation of Empirical Evidence," *Review of General Psychology*, 11 (2), 155–78.

Pham, Michel Tuan, Maggie Geuens, and Patrick De Pelsmacker (2013), "The Influence of Ad-Evoked Feelings on Brand Evaluations: Empirical Generalizations from Consumer Responses to More Than 1000 TV Commercials," *International Journal of Research in Marketing*, 30 (4), 383–94.

Racherla, Pradeep, Munir Mandviwalla, and Daniel J. Connolly (2012), "Factors Affecting Consumers' Trust in Online Product Reviews," *Journal of Consumer Behaviour*, 11 (2), 94–104.

Rimé, Bernard (2009), "Emotion Elicits the Social Sharing of Emotion: Theory and Empirical Review," *Emotion Review*, 1 (1), 60–85.

Rocklage, Matthew D. and Russell H. Fazio (2015), "The Evaluative Lexicon: Adjective Use as a Means of Assessing and Distinguishing Attitude Valence, Extremity, and Emotionality," *Journal of Experimental Social Psychology*, 56, 214–27.

Rocklage, Matthew D. and Russell H. Fazio (2018), "Attitude Accessibility as a Function of Emotionality," *Personality and Social Psychology Bulletin*, 44 (4), 508–20.

Rocklage, Matthew D., Derek D. Rucker, and Loran F. Nordgren (2018a), "The Evaluative Lexicon 2.0: The Measurement of Emotionality, Extremity, and Valence in Language," *Behavior Research Methods*, 50 (4), 1327–44.

Rocklage, Matthew D., Derek D. Rucker, and Loran F. Nordgren (2018b), "Persuasion, Emotion, and Language: The Intent to Persuade Transforms Language via Emotionality," *Psychological Science*, 29 (5), 749–60.

Russell, James A. and Lisa Feldman Barrett (1999), "Core Affect, Prototypical Emotional Episodes, and Other Things Called Emotion: Dissecting the Elephant," *Journal of Personality and Social Psychology*, 76 (5), 805–19.

Schellekens, Gaby A.C., Peeter W.J. Verlegh, and Ale Smidts (2010), "Language Abstraction in Word of Mouth," *Journal of Consumer Research*, 37 (2), 207–23.

Schindler, Robert M. and Barbara Bickart (2012), "Perceived Helpfulness of Online Consumer Reviews: The Role of Message Content and Style," *Journal of Consumer Behaviour*, 11 (3), 234–43.

Schwarz, Norbert (2012), "Feelings-as-Information Theory," in *Handbook of Theories of Social Psychology*, P. Van Lange, A.W. Kruglanski, and E.T. Higgins, eds. Thousand Oaks, CA: SAGE Publications, 289–308.

Shiv, Baba and Alexander Fedorikhin (1999), "Heart and Mind in Conflict: The Interplay of Affect and Cognition in Consumer Decision Making," *Journal of Consumer Research*, 26 (3), 278–92.

Smith, Aaron and Monica Anderson (2016), "Online Shopping and E-Commerce," Pew Research Center (December 19), https://www.pewresearch.org/internet/2016/12/19/online-shopping-and-e-commerce/.

Sparks, Beverley A. and Victoria Browning (2011), "The Impact of Online Reviews on Hotel Booking Intentions and Perception of Trust," *Tourism Management*, 32 (6), 1310–23.

Thorndike, Edward L. (1920), "A Constant Error in Psychological Ratings," *Journal of Applied Psychology*, 4 (1), 25–29.

Van Kleef, Gerben A., Evert A. Van Doorn, Marc W. Heerdink, and Lukas F. Koning (2011), "Emotion Is for Influence," *European Review of Social Psychology*, 22 (1), 114–63.

Vaughn, Richard (1980), "How Advertising Works: A Planning Model," *Journal of Advertising Research*, 20 (5), 27–33.

Voss, Kevin E., Eric R. Spangenberg, and Bianca Grohmann (2003), "Measuring the Hedonic and Utilitarian Dimensions of Consumer Attitude," *Journal of Marketing Research*, 40 (3), 310–20.

Warriner, Amy Beth, Victor Kuperman, and Marc Brysbaert (2013), "Norms of Valence, Arousal, and Dominance for 13,915 English Lemmas," *Behavior Research Methods*, 45 (4), 1191–1207.

Weiner, Bernard (1985), "'Spontaneous' Causal Thinking," *Psychological Bulletin*, 97 (1), 74–84.

Westbrook, Robert A. (1987), "Product/Consumption-Based Affective Responses and Postpurchase Processes," *Journal of Marketing Research*, 24 (3), 258–70.

Westbrook, Robert A. and Richard L. Oliver (1991), "The Dimensionality of Consumption Emotion Patterns and Consumer Satisfaction," *Journal of Consumer Research*, 18 (1), 84–91.

Word of Mouth Marketing Association (2014), "Return on Word of Mouth," http://womma.org/wp-content/uploads/2015/09/STUDY-WOMMA-Return-on-WOM-Executive-Summary.pdf.

Xu, Alison Jing and Robert S. Wyer (2010), "Puffery in Advertisements: The Effects of Media Context, Communication Norms, and Consumer Knowledge," *Journal of Consumer Research*, 37 (2), 329–43.

Yin, Dezhi, Samuel D. Bond, and Han Zhang (2014), "Anxious or Angry? Effects of Discrete Emotions on the Perceived Helpfulness of Online Reviews," *MIS Quarterly*, 38 (2), 539–60.

Yin, Dezhi, Samuel D. Bond, and Han Zhang (2017), "Keep Your Cool or Let It Out: Nonlinear Effects of Expressed Arousal on Perceptions of Consumer Reviews," *Journal of Marketing Research*, 54 (3), 447–63.