

The Phenomenal Disjunction:
Emotionality for Ourselves versus Others

Matthew D. Rocklage* and Russell H. Fazio

Abstract

There exists a fundamental separation between us and others: we have the ability to experience our own emotional reactions, but can never directly experience these reactions when they come from others. Across eight studies and over 100,000 real-world product reviews, we demonstrate that this disconnect has consequences. Whereas consumers' own emotionality is related to their issuing more extreme judgments regardless of product, this emotionality can backfire when communicated to others if it mismatches the hedonic versus utilitarian nature of the product. Trust underlies this disjunction. Individuals readily trust their own emotional reactions to inform their evaluations, but do not have this same trust in others and thus require additional evidence about the reviewer or the reactions. This disjunction also occurs in real-world product reviews. Using over half a million consumer judgments of the online reviews, we find that reviews that mismatch the nature of the product are less impactful to others and less likely to rise to the top of the reviews and be displayed on the front page of the product on Amazon.com. This disjunction reveals the irony that whereas one's own emotion is related to more extreme support of a product, it can backfire when expressed to others.

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* Corresponding Author. Matthew D. Rocklage (matthew.rocklage@kellogg.northwestern.edu) is a postdoctoral fellow of marketing, Northwestern University, Kellogg School of Management, Evanston, IL 60608. Russell H. Fazio (fazio.11@osu.edu) is the Harold E. Burt Professor of Psychology, Ohio State University, Columbus, OH 43210. The authors thank Derek Rucker for his comments regarding an earlier draft of this manuscript.

A principle means by which consumers learn about products and services is through online reviews. Indeed, the World Wide Web contains reviews on everything from consumer products to restaurants to hotels; Amazon.com, TripAdvisor, and Yelp are repositories for over half a billion reviews alone. Moreover, the stakes are high in this domain. Past research has demonstrated the causal impact of online reviews on consumer behavior (Chevalier and Mayzlin 2006) and, according to the Word of Mouth Marketing Association (2014), combined with face-to-face communication, online reviews and exchanges influence 13% of all sales – \$6 trillion dollars annually.

Such reviews can be considered from the perspective of both the reviewers themselves and from those reading the review (e.g., Moore 2015; Packard and Berger in press). In the current work, we are particularly interested in how the emotionality of reviewers influences both the reviewer as well as the reader. Specifically, we seek to understand how reviewers' emotionality predicts their final judgment of their product and also how such emotionality impacts the reader. Is the impact of emotionality uniform across both the reviewer and the reader, or can the impact on the reviewer versus the reader become disjointed and even show opposite outcomes?

On the one hand, it is possible that the more reviewers base their positivity toward a product on their emotional reactions, the more extremely positive they are toward the product and that readers find this emotionality to be impactful as well. Indeed, research indicates that emotionality can often be impactful to the person experiencing the emotion (e.g., Shiv and Fedorikhin 1999; Pham et al. 2001; Lavine et al. 1998) as well as to others who are observing the emotional reaction (e.g., Frijda and Mesquita 1994; Andrade and Ho 2009).

However, there is also theoretical reasoning to suggest that the impact of emotionality may differ between the person experiencing the emotion and the person to whom that emotionality is being communicated. Indeed, a fundamental disjunction exists for the human experience: our own reactions provide us with a great deal of information and we implicitly trust them to help us navigate the world; yet, while we also understand that others' reactions may be informative, we may question whether their reactions are truly valid and reasonable. In essence, we all know of and experience subjective sensations and reactions (i.e., subjective *phenomena*) and yet despite this awareness for ourselves, we have no way of directly experiencing and therefore understanding others' reactions in the same way (Chalmers 1995). Indeed, others can only indirectly communicate their reactions via overt behavior, or, as is our focus for the current work, via language. We term this gap between our ability to experience our own subjective reactions but not others' as the *phenomenal disjunction*.

Such a disjunction has implications for our ability to rely on others' opinions to make decisions. As an example, imagine that you used a blender and found it to be “amazing” and “fantastic” – both quite emotional responses to a rather unemotional, utilitarian object. Despite the seeming mismatch between these reactions and the object, we would have little trouble trusting that we did, indeed, find the blender to be amazing. Now, imagine someone else told you how “amazing” and “fantastic” the blender was. We would likely find such a reaction more questionable. We are left wondering whether such

an emotional reaction to a blender is warranted even if the person really had shared a truthful reaction. This disjunction is all the more apparent in the world of online reviews where consumers often rely on the reactions of anonymous individuals for their buying decisions. Given that they have very little information about the person reviewing the product, consumers are often faced with the scenario of deducing whether to trust others' evaluations often based only on what the person has written and what is known about the product.

In the current set of studies, our aim is to demonstrate that, due to this disjunction, emotionality may not have a uniform impact on both reviewers and readers. We then seek to examine the implications of this disjunction in the domain of online reviews both in the laboratory as well as in the real world. To do so, we first demonstrate each half of this disjunction separately and then bring both parts together in a final study. Specifically, using real-world online product reviews we begin by showing that consumers utilize their own naturally-arising emotional reactions to inform their judgments across both emotional (e.g., movies) and unemotional products (e.g., blenders). Indeed, as we detail subsequently, one's own emotional reactions provide a rather undeniable source of information. We then turn to the second half of this disjunction: this is not true when one learns about the product through a description offered by others. Instead, although others' emotional reactions are considered more impactful when the product is emotional in nature, such reactions backfire and are less impactful when they do not match the nature of the product.

We then assess the proposed reason for why we treat our own emotional reactions as valid, but not others' reactions. We test the theoretical proposition that whereas individuals have every reason to trust their own emotional reactions, they require additional information to trust others' reactions. We show that increasing trust in the person expressing the emotionality leads individuals to not only be more accepting of this person's reactions in general, but specifically more accepting of reactions that tend not to match the nature of the product.

RELYING ON ONE'S OWN VERSUS OTHERS' EMOTIONAL REACTIONS

One's Own Emotional Reactions

There is a great deal of research supporting the idea that individuals tend to trust their own reactions, particularly those that are emotional in nature. For example, research has shown that when feelings or emotions are elicited at the time of the judgment, individuals often rely on such reactions for in-the-moment judgments and decisions (e.g., Shiv and Fedorikhin 1999; Gorn, Pham, and Sin 2001; Pham et al. 2001). This research has showcased the power of emotionality when experienced at the time individuals are making their judgments, often when such feelings are not elicited by the object itself (i.e., they are only incidental).

Closer to the current work, research has also shown that emotionality impacts individuals' judgments and behaviors when such emotionality has been directly elicited by the object and stored in memory (Lavine et al. 1998;

Stangor, Sullivan, and Ford 1991; Haddock, Zanna, and Esses 1993). For instance, using a wide range of objects and topics (e.g., power plants, roller coasters), research has found that the more attitudes are based on emotion, the more stable these attitudes are across different contexts (Rocklage and Fazio 2016; see also Darke, Chattopadhyay, and Ashworth 2006). Moreover, research has also shown that consumers issue more extreme final judgments of a product they have purchased when these evaluations are based on emotion (Rocklage and Fazio 2015, Study 3). The more emotion individuals expressed in the text of their reviews, the more extreme their summary judgments were of the product in terms of the final star rating they issued it. Thus, this work indicates that individuals tend to give special significance to their emotional responses when making evaluative judgments.

This past work puts forth the possibility that emotional reactions stored in memory are used to inform individuals' judgments even when the products being assessed are inherently unemotional in nature. However, such a possibility has not yet been directly demonstrated. Therefore, to establish the first half of the phenomenal disjunction, we sought to show using real-world online product reviews that emotionality is related to more extreme judgments across both typically emotional – i.e., hedonic – and unemotional – i.e., utilitarian – products (Batra and Ahtola 1991; Hirschman and Holbrook 1982; Voss, Spangenberg, and Grohmann 2003). While past research has indicated that the effects of emotionality may depend on product type when feelings are incidental to the product (e.g., individuals were also listening to happy music; Pham 1998; Adaval 2001; see also Yeung and Wyer 2004), this work has not investigated the effects of emotionality when such emotion arises from actual use of the product itself. Based on the past work we have cited, it is likely the case that such emotionality is utilized regardless of product type. Indeed, our own emotional reactions provide a rather undeniable and diagnostic indication of our opinion (Fazio 1995). Demonstrating the effect of emotionality across product type would support the hypothesis that individuals tend to find their own emotional reactions as important sources of information even in situations where such emotionality mismatches the typical emotionality a product elicits.

Others' Emotional Reactions

As alluded to previously, it is possible that emotionality is generally more impactful to others as well. For example, past theorizing has put forth the possibility that emotional displays evolved to gain the attention of others (Frijda and Mesquita 1994; Clark, Pataki, and Carver 1996), and, in a negotiation context, individuals can amplify their emotional reactions to successfully elicit additional concessions (Andrade and Ho 2009). Nevertheless, despite the validity we bestow on our own reactions, based on the theorizing behind the phenomenal disjunction, we may not do so for others. This is particularly true in an anonymous online context. As past work has shown, when others provide us with their assessments, we must take into account both what the person is saying as well as what they are saying it about (Moore 2015; Packard and Berger in press). Indeed, as we argue here, taking these facets into account allows us to assess the extent to which we should heed this person's advice.

On the one hand, others' reactions can be in line with our expectations and may provoke relatively little reason to distrust this person's reactions.

This is the case when individuals use emotional reactions such as “exciting” and “delightful” to describe a movie or when they use unemotional, cognitive words such as “useful” and “beneficial” to describe a blender. On the other hand, others’ reactions can also be at odds with our expectations. This would be the case when others instead describe a blender as “exciting” and “delightful” or when expressing unemotional reactions toward a movie as “useful” and “beneficial.” In essence, these reactions seem not to fit with the nature of the object. Given that readers of reviews are unable to experience such reactions themselves, mismatches of this sort may evoke a sense of puzzlement that may lead them to distrust the reviews.

Trust in Emotional Reactions

The logic behind the phenomenal disjunction implies a theoretical proposition regarding trust. The reason we rely on our own emotional reactions but not others’ is that we are unable to experience their reactions ourselves. Thus, trust becomes the pivotal mechanism that separates our own reactions versus others. We have every reason to trust our own reactions. Indeed, emotion provides us with a clear signal of something important within our environment (e.g., Frijda 1986; Lazarus 1991; Ortony, Clore, and Collins 1988; Scherer 1984) and our emotional reactions provide a particularly undeniable and diagnostic indication of our evaluations (Fazio 1995). Emotions work as an adaptive, functional system because we naturally trust them as providing pertinent information (see Avnet, Pham, and Stephen 2012). However, despite our understanding that others also have such reactions, the disjunction we are investigating leads us to hypothesize that we may require additional information to trust others’ reactions, particularly when they are at odds with our expectations regarding the nature of the product.

To summarize the goals of the current work, regarding the first half of the phenomenal disjunction, we seek to demonstrate that individuals’ stored evaluations will be all the more extreme when they are based on emotional reactions, regardless of the inherent emotionality of the topic. Such a finding would support the notion that individuals trust their own emotionality even when it is in reference to products that do not typically elicit such emotionality. However, we then seek to demonstrate that this exact same emotionality toward utilitarian products backfires when expressed to others. Thus, ironically, despite an individual being all the more positive given their emotional reactions to that product, others may find such emotionality adverse. Instead, readers require additional information in order to trust these mismatching reactions. If we can enhance the trust that people have in the person expressing the mismatching reactions, we may be able to ameliorate the negative impact that mismatching reactions have on others.

*THE EVALUATIVE LEXICON:
MEASURING CONSUMERS' REACTIONS USING NATURAL
LANGUAGE*

To test our hypotheses, the current studies make use of both in-laboratory experiments and more than 100,000 real-world online reviews across over 500 unique products. Specifically, we are able to simultaneously test whether this phenomenal disjunction occurs both under well-controlled experiments as well as whether it occurs in actual real-world reviews. To do so, we use the Evaluative Lexicon (EL; Rocklage and Fazio 2015) – a recent methodological advance in quantifying natural language to measure the valence, extremity, and emotionality of consumers' opinions. The EL was constructed by eliciting normative ratings for a wide range of evaluative adjectives. For each of the adjectives contained in the EL, judges were asked to provide ratings on how positive a person would be and, separately, how emotional a person would be if they were to use the adjective to describe their opinion. These ratings can then be used to quantify consumers' opinions whenever they used that adjective. For instance, if individuals use the adjective “exciting,” they would be assigned a score of 7.78 out 9.00 on valence, 3.29 out of 4.50 on extremity (calculated as the deviation from the midpoint of the valence scale), and 7.33 out of 9.00 on emotionality.

The EL has been validated both experimentally under well-controlled lab conditions as well as in natural, archival text. For instance, in one experiment researchers experimentally created both emotionally- and cognitively-based attitudes toward a fictitious water animal in the laboratory and then measured these attitudes based on the adjectives individuals used to describe their evaluation of this animal (Rocklage and Fazio 2015, Study 2). In the positive emotional condition, researchers provided participants with a narrative that described a swimmer soaring through the water on the back of this water animal. In the positive cognitive condition, on the other hand, researchers provided participants with an encyclopedic entry describing the water animal as, for instance, beneficial to the local coastal community (see also Crites, Fabrigar, and Petty 1994). Based on the adjectives individuals used to describe their evaluation of this water animal, the EL was able to predict which condition individuals were in (e.g., emotional or cognitive) 88.2% of the time.

Moreover, using natural text from Amazon.com product reviews, Rocklage and Fazio (Study 3) found that the more emotional the adjective was, the more often it was used within the reviews with the verb “feel” (versus “think”/“believe”). Given that the EL measures emotionality as a continuum from more emotional to more cognitive, this association also indicates that the more cognitive the adjective, the more it was used alongside “think”/“believe.” Thus, the EL has been validated for measuring individuals' evaluations and their emotionality both experimentally and in natural text.

Important to the current aims, the EL makes a distinction between the emotionality and the extremity of individuals' evaluations. 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 4.50), but is quite unemotional and cognitive (2.89 out of 9.00). Whereas past research has shown that

emotionality and extremity are separable constructs, they both have often predicted unique variance in a similar manner. For instance, both have predicted more consistent attitude expression across contexts and more extreme final judgments of consumer products (Rocklage and Fazio 2015, 2016). However, for the current work, it is possible that when communicating with others that these variables have differing effects. Thus, we control for the effects of extremity to assess the importance of the emotionality of individuals' attitudes per se.

STUDY 1

Past research has indicated that emotional reactions tend to be associated with more extreme and consistent summary judgments across a wide range of objects (Lavine et al. 1998; Rocklage and Fazio 2015, 2016). As of yet, however, such a relation between emotionality and final judgments has not been systematically compared for products that do or do not lend themselves to emotionality. In the current study we investigate whether emotional reactions are related to more extreme judgments for reviewers regardless of whether the product is naturally more emotional or unemotional in nature, thereby demonstrating that when individuals themselves have an emotional reaction that it may be particularly indicative of their evaluation.

Method

Data. We used of a large existing database of 5.9 million Amazon.com product reviews that has been utilized in previous research on attitude basis and its consequences (Rocklage and Fazio 2015). These reviews were originally extracted via an automated script from the Amazon.com website and were provided by Jindal and Liu (2008). They represent the Amazon.com reviews between the years of 1996 and 2006 and therefore encompass an extremely large range of products from those that are more hedonic in nature (e.g., movies, music, and novels) to those that are more utilitarian in nature (e.g., software, textbooks, and electric shavers). Each review contained the text that consumers used to evaluate the product as well as their final judgment of the product in the form of a star rating (1 to 5 stars).

Our first step was to identify those products that are relatively more hedonic in nature versus those that are more utilitarian. In line with past research on distinguishing hedonic versus utilitarian products at a normative level, we identified these different types of products based on the average emotionality the products elicited from consumers. For example, past research has found that at an aggregate level, hedonic products are more likely to be described using emotional descriptors (e.g., video games and vacation resorts as enjoyable and exciting) versus relatively unemotional descriptors for utilitarian products (e.g., batteries and diapers as helpful and effective; Voss, Spangenberg, and Grohmann 2003; Batra and Ahtola 1991). (As we demonstrate in Study 2 of the current work, we also have evidence this is the case for the EL adjectives in particular).

We utilized a review if the consumer used at least one of the EL adjectives and focused on discussing the positive aspects of the product (i.e., the consumer used just positive adjectives; $N_{\text{reviews}} = 3.1$ million). We concentrated on those consumers who directly put forth the merits of the product as they are more likely to be proponents of the product and therefore

seeking to describe the product in such a way so as to help readers come to a decision to purchase it. To measure the emotionality each consumer expressed, following Rocklage and Fazio (2015), we imputed the normative EL ratings for each adjective the consumer used. Take the following sentences as an example: “This movie was amazing. The camera work was enjoyable and the acting was delightful. The storyline was simply amazing.” The underlined adjectives have normative emotionality ratings of 6.59, 6.77, 7.27, and 6.59 out of 9.00, respectively. The emotionality expressed by this individual would therefore be: $(2 * 6.59 + 1 * 6.77 + 1 * 7.27) / 4 = 6.81$. After creating this metric for each consumer, we averaged this index for all the consumers for each product. In order 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 reviews ($N_{\text{products}} = 5,171$). Indeed, while many products have hundreds of reviews written about them, others have as few as one review and thus may not accurately reflect the nature of the product. We therefore calculated the average positive emotionality used to describe each product across a minimum of 50 consumers.

From the resulting distribution, 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 top 5% most cognitive in nature (emotionality of 4.97 or less). We were left with 25,854 reviews across 258 hedonic products, and 25,171 reviews across 258 utilitarian products ($N_{\text{reviews}} = 52,025$; $N_{\text{products}} = 516$). Importantly, while these products were normatively either hedonic ($M_{\text{emotionality}} = 5.81$, $SD_{\text{emotionality}} = .81$) or utilitarian ($M_{\text{emotionality}} = 4.81$, $SD_{\text{emotionality}} = .87$), the consumers within each product type varied a great deal in their expressed emotionality. Indeed, for both hedonic and utilitarian products, the emotionality of consumers ranged from 2.50 to 7.61, the full range possible for the positive EL adjectives.

The products within each category fit with expectations of what hedonic versus utilitarian products would be. For instance, those products identified as hedonic included action and children’s movies, music, fiction novels, memoirs, and interactive children’s toys. Those products identified as utilitarian included software, textbooks, GPS units, headphones, power tools, and electric shavers.¹

¹ Further reflecting the hedonic versus utilitarian nature of the products, consumers used additional language that indicated 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 based on their practical uses, they should use “feel” relatively less and verbs denoting a rational, cognitive assessment more – “think” and “believe.” For those reviews in our sample that used the words “feel” and/or “think” and “believe,” we created a ratio indicating how often the consumer used these words in relation to one another (“feel” / (“feel” + “think” and “believe”). In line with our hypothesis, consumers used the word “feel” more often to describe their reaction to hedonic products ($M = .33$) than to describe their reaction to utilitarian products ($M = .26$; $t(17584) = 11.15$, $p < .001$). Put another way, consumers used “think” and “believe” more often for utilitarian products and less often for hedonic products. This finding further reinforces the validity of the distinction made between the product types in the current sample.

Results

We used multiple regression to examine whether the final judgment consumers issued depended on the emotionality implied in that review as well as the product type, above-and-beyond extremity. We effects coded product type as hedonic (coded as '1') or utilitarian ('-1') and standardized the implied emotionality and extremity of the reviews. To test our hypothesis, we entered two two-way interactions: an emotionality by product type interaction and an extremity by product type interaction.

Replicating past research, there was an effect such that greater implied extremity was related to more positive summary judgments, i.e., a higher star rating ($B = .22$, $t(52019) = 32.21$, $p < .001$). There was also an extremity by product type interaction ($B = .01$, $t(52019) = 2.16$, $p = .03$), but this simply indicated that extremity was related to slightly more extreme summary judgments for hedonic products ($B = .23$, $t(52019) = 22.22$, $p < .001$) than for utilitarian products ($B = .20$, $t(52019) = 23.70$, $p < .001$).

Most importantly, there was an overall effect of emotionality indicating that more emotional reviews were related to more positive summary judgments ($B = .04$, $t(52019) = 5.99$, $p < .001$) and that this was not qualified by product type ($B = .07$, $t(52019) = 1.04$, $p = .30$). Replicating past research, then, there was a simple overall effect of emotionality when reviewers issued their summary judgments, over-and-above the effects of the extremity of the adjectives used to describe the product.

Discussion

The results of this study indicate that regardless of product type that individuals tend to issue more extremely positive summary judgments if they express greater emotionality toward the product. In line with past work, then, these results support the proposition that emotional reactions provide a diagnostic indication of one's own evaluations (Rocklage and Fazio 2015, 2016; Fazio 1995). Thus this study set up the first half of the phenomenal disjunction: emotional reactions signal a rather strong reaction for individuals themselves, regardless of whether the product itself is normatively considered hedonic or utilitarian in nature. That is, we found that even if consumers had more emotional reactions toward such utilitarian products as power tools, they were more extremely positive toward that product. In Study 2 we assessed the extent to which such emotionality would be desired and expected by others.

STUDY 2

Study 1 demonstrated that emotionality on the behalf of individuals themselves signals a more extremely positive opinion. Despite emotionality being all the more powerful to the individual him/herself, however, others who hear about the product may not trust such reactions when they are not expected. Such would be the case for relatively utilitarian products, which most often elicit more cognitive, unemotional reactions. Indeed, as we have argued individuals are unable to experience others' reactions themselves and thus may find mismatching reactions questionable. However, such a possibility has not been investigated. In Study 2, we demonstrate that individuals do indeed desire and have expectations for certain kinds of information for

hedonic versus utilitarian products. This study sets the stage to test the consequences of the phenomenal disjunction.

Method

Participants. Undergraduate students participated in partial fulfillment of a course requirement ($N = 55$; $Range_{age} = 18$ to 34 years old, $M_{age} = 20$; 59% male, 41% female).

Procedure. Participants were told they would be shown four different products. “Movies” and “music” were used for the hedonic products, and “microwaves” and “blenders” were used for the utilitarian products. For each of these products, participants were asked to select two to four adjectives that they would want and expect to receive about a very good product of that category. We used virtually the entire list of positive adjectives from the EL (48 adjectives) so that individuals had the ability to choose from as wide of a range of adjectives as possible to describe the products. However, given that we asked participants to describe a “very good” product, we removed this term from the list of words as we did not want them to simply restate this adjective as their response.

Results

We began by examining those adjectives that were chosen most for the hedonic and utilitarian product types. The top three adjectives chosen for describing hedonic products were “enjoyable,” “amazing,” and “fantastic” (chosen 36, 36, and 35 times, respectively) whereas the top three adjectives for utilitarian products were “useful,” “safe,” and “superior” (chosen 48, 26, and 23 times, respectively). Thus, qualitatively, individuals’ choice of adjectives corresponds to our conceptual reasoning: more emotional adjectives were expected and most impactful for describing hedonic products whereas more unemotional adjectives were expected and most impactful for describing utilitarian products.

Quantitatively, this difference in individuals’ choice of adjectives should relate to an average difference in the emotionality expected for each product type: a paired t -test revealed that individuals selected adjectives that were more emotional for hedonic products ($M = 6.08$) compared to utilitarian products ($M = 4.34$; $t(54) = 19.83$, $p < .001$).

Next, we examined the data even more closely and assessed whether *within* each product type the more emotional adjectives are selected more often for hedonic products and the more unemotional adjectives are selected more often for utilitarian products.

We conducted two regression equations, one for each product type. Each regression equation used the emotionality and extremity (both standardized) of each adjective to predict how many times that adjective was chosen. For hedonic products, there was a trend toward more extreme adjectives being chosen to describe the products ($B = 2.20$, $t(45) = 1.53$, $p = .13$). More importantly, as hypothesized, the more emotional the adjective, the more it was chosen as expected and impactful ($B = 4.13$, $t(45) = 2.86$, $p = .006$). For utilitarian products, the more extreme the adjective, the more times

it was chosen ($B = 3.38$, $t(45) = 2.22$, $p = .03$). Most importantly, the more emotional the adjective, the fewer times it was chosen ($B = -5.81$, $t(45) = 3.82$, $p < .001$; see Figure 1).² Thus, individuals expected and desired greater emotionality for hedonic products, but such emotionality was disfavored for utilitarian products.

Discussion

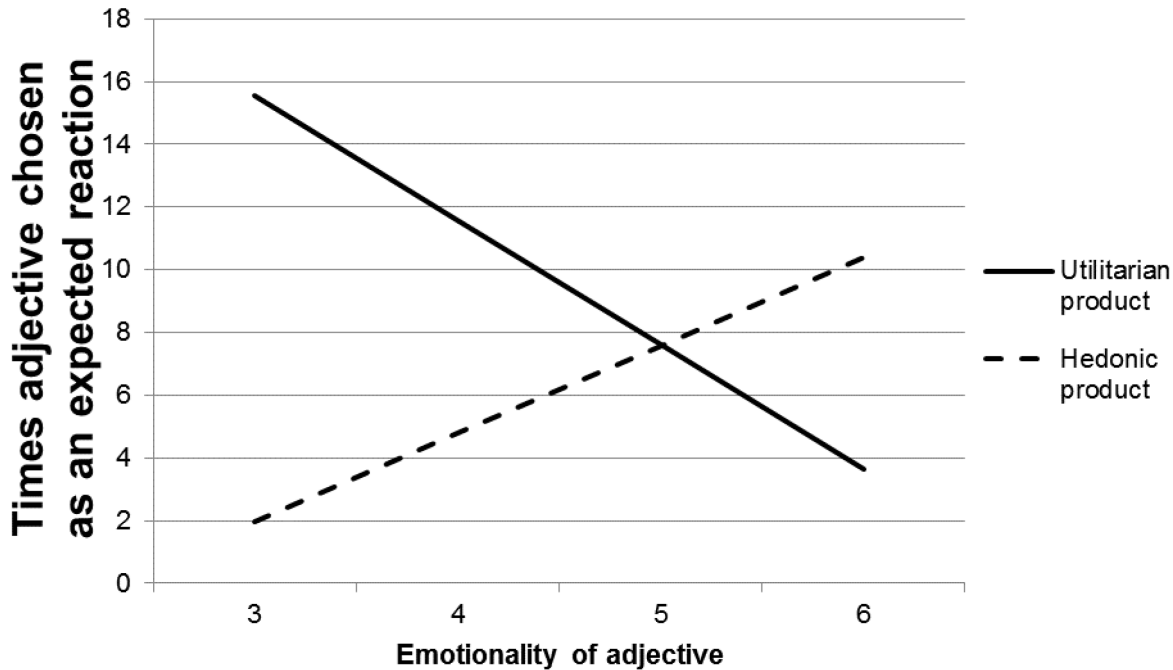
Participants indicated that they wanted and expected to hear about emotional reactions for hedonic products, but that such emotional reactions were not preferred for utilitarian products. Instead, participants desired more unemotional, cognitive reactions to these products. These results are in line with past work demonstrating that individuals often have specific expectations for the capabilities of products (Oliver 1980, 1993; Westbrook 1987) and for the attributes they desire for these products (Spreng, MacKenzie, and Olshavsky 1996). We show that these expectations and desires exist not only for the attributes of the product (e.g., how easy the product is to use), but also for the kinds of reactions consumers expect to learn about from others.

Most importantly, these results reveal the phenomenal disjunction. Whereas individuals appear to readily trust their own emotional reactions even for utilitarian products, the results from the current study indicate that such emotionality may backfire when expressed to others – that is, it may violate their expectations. In the next study we experimentally test this possibility by providing participants with emotional and unemotional reactions to hedonic and utilitarian products.

² As the reader may notice from the number of times the top three adjectives were selected, some adjectives received a larger number of selections as most helpful and therefore the data are skewed in the positive direction. To correct this skew, we log-transformed the number of times each adjective was chosen and used this variable in the above regression equations. All results were similar as when using the non-log-transformed variables.

FIGURE 1

NUMBER OF TIMES ADJECTIVE WAS CHOSEN AS MOST EXPECTED AND IMPACTFUL FOR HEDONIC AND UTILITARIAN PRODUCTS, STUDY 1.



Note. Values on the x-axis represent the approximate range of possible values in the sample.

STUDY 3A

The first two studies demonstrated that whereas emotionality is particularly indicative of individuals' evaluations for themselves across both hedonic and utilitarian products (Study 1), others report not viewing such emotionality as indicative of a quality utilitarian product (Study 2). In essence, this mismatch between emotionality and product type allows us to uncover the disjunction we have referenced. When individuals' reactions match the nature of the product, there is less of a reason to distrust that person's reaction. However, when their reactions are not in line with expectations, this should lead others to question those reactions. After all, they cannot experience those reactions themselves even if they are indeed truthful.

However, while we have set the stage for such a possibility, we have yet to fully test it. We examine this prospect in the current experiment by constructing online reviews for both hedonic and utilitarian products that systematically differ in their emotionality. If it is the case that the expectations individuals provided in Study 2 have consequences, we should find an effect such that emotional reactions are accepted for hedonic products

and thus found to be impactful to readers, but that emotional reactions are not as accepted for utilitarian products and thus found to be relatively less impactful.

Method

Participants. Undergraduate students participated in this study as partial fulfillment of a course requirement ($N = 72$; $Range_{age} = 18$ to 22 years old, $M_{age} = 19$; 61% male, 39% female). Three participants' data were excluded from the analyses as they indicated that they had not taken the study seriously (i.e., answering "No" to the question: "...do you think you took this study seriously?"). The final sample consisted of 69 participants.

Procedure. Participants were told they would be shown a series of products and that they were to put themselves in the mindset of someone interested in buying such a product. In particular, they were asked to think about the kind of information they would want about that kind of product before they purchased it. They were then shown four different product reviews: two reviews of hedonic products – one of music and one of a movie – and two reviews of utilitarian products – one of a microwave and one of a blender. These particular products were chosen given that individuals view these products as primarily hedonic and utilitarian in nature as indicated in Study 2.

To experimentally manipulate the emotionality conveyed in each review, we constructed two reviews for each product – one high in emotionality and one low – such that they would be identical except for the emotionality of the adjectives that were used to describe the 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." While both sentences are the same length and structure, the adjectives used differ greatly in their emotionality. Indeed, the high emotionality sentence implies an average emotionality of 6.68 out of 9.00 whereas the low emotionality sentence implies an average emotionality of 4.14. Furthermore, given that there is an association between emotionality and extremity, we took care to ensure that the reviews were not only similar in length and structure, but also in their implied extremity. The sentence above demonstrates this similarity as the adjectives in the high emotionality sentence imply an average extremity of 3.50 out of 4.50 and those in the low emotionality sentence imply an average of 3.60. More formally, using paired t -tests comparing the hedonic versus utilitarian reviews to one another, the implied extremity did not differ between the hedonic ($M = 3.41$) or utilitarian ($M = 3.45$) products ($t(3) = .56$, $p = .62$), but the implied emotionality did for the hedonic ($M = 7.00$) and utilitarian ($M = 4.18$) products ($t(3) = 127.53$, $p < .001$).

Which product – e.g., either the music or the movie – was high or low in emotionality for each product type was a between-subjects variable. 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. Thus,

participants were shown four product reviews in a 2 [product type: hedonic or utilitarian] x 2 [review emotionality: high or low emotionality] x 2 [condition: between-subjects counterbalancing] mixed design.

After each review, participants then answered two questions that indicated how impactful they found that review. First, they were asked, “How helpful was this review to deciding whether you would buy the product or not?” (1 = not at all helpful; 7 = very helpful).

Second, to assess intentions to purchase that particular product after reading the review, we then asked, “how likely would you be to purchase this particular [product] after reading this review?” (1 = not at all likely; 7 = very likely).³

Results

Review helpfulness. To test our hypotheses, we conducted a 2 x 2 x 2 mixed analysis of variance (ANOVA) with product type and review emotionality as within-participants variables and counterbalancing condition as a between-subjects variable. As hypothesized, there was a significant two-way interaction between product type and review emotionality ($F(1, 67) = 24.00, p < .001$; see Figure 2). This interaction indicated that reviews of hedonic products were seen as more helpful if they implied greater emotionality ($M = 4.57$) as opposed to less emotionality ($M = 3.96$; $F(1, 67) = 12.21, p < .001$) whereas high emotion reviews backfired for utilitarian products and were seen as less helpful ($M = 3.71$) compared to the less emotional reviews ($M = 4.77$; $F(1, 67) = 14.68, p < .001$). These effects were not moderated by counterbalancing condition ($F(1, 67) = .01, p = .91$).

Intention to purchase. We conducted the same 2 x 2 x 2 mixed ANOVA for individuals’ intentions to purchase the product after reading its review. As before, we expected a significant two-way interaction between product type and review emotionality, which we indeed observed ($F(1, 67) = 19.46, p < .001$; see Figure 2). Reviews of hedonic products with greater emotionality led to greater intentions to purchase the product ($M = 4.40$) compared to those with less emotionality ($M = 3.79$; $F(1, 67) = 14.82, p < .001$). Conversely, high emotion reviews of utilitarian products backfired and led to lower intentions to purchase ($M = 3.55$) compared to those with lower emotionality ($M = 4.37$; $F(1, 67) = 6.31, p = .01$). This interaction was not moderated by counterbalancing condition ($F(1, 67) = .56, p = .46$).

Discussion

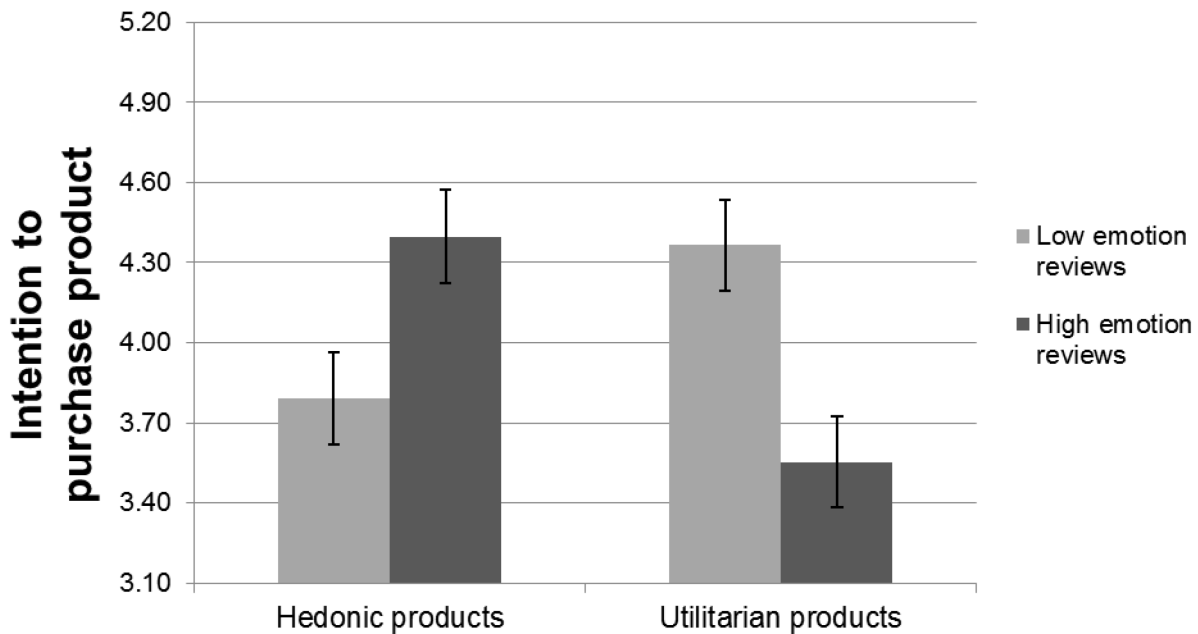
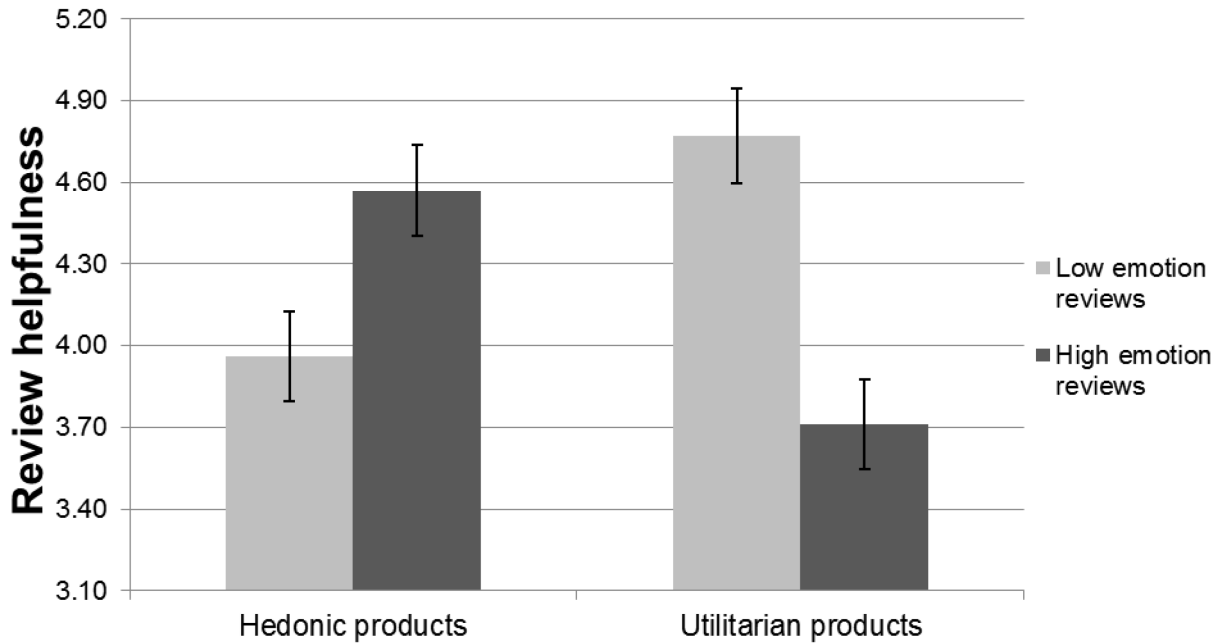
We found that emotional reactions were accepted and more impactful for hedonic products, but that such reactions were less accepted and considered less impactful for utilitarian products. Instead, individuals found relatively unemotional reactions more helpful. Moreover, these emotional reactions led participants to signal they would be more likely to purchase the

³ Although helpfulness and intentions to purchase were correlated ($r(67) = .81, p < .001$), we analyze these questions separately to demonstrate each review’s effect on both helpfulness and purchasing intentions. Results are similar when combining these questions into a single index.

product if it was hedonic, but less likely if the product was utilitarian. Together, these results indicate that although more emotional reactions predict more extreme summary judgments for the consumer him/herself, given that readers cannot directly experience such emotionality themselves they come to view the reviewer's reaction as less helpful.

FIGURE 2

HELPFULNESS AND INTENTION TO PURCHASE PRODUCT BASED ON PRODUCT TYPE AND EMOTIONALITY OF REVIEWS, STUDY 3A.



Note. Error bars represent ± 1 standard error of the mean (SEM).

STUDY 3B

Our results thus far show that individuals find emotional reactions important to their own judgments, but that such emotion is not as powerful to others when such reactions violate their expectations. Given that past research has indicated that violating individuals' expectations often leads them to be surprised (e.g., Westbrook and Oliver 1991), the current study sought to examine the extent to which surprise was related to the negative downstream consequences we demonstrated. Such a result would provide further evidence that the effects we have seen thus far are related to a mismatch between individuals' expectations and the emotionality of the reactions within a review.

Method

Participants. Participants were recruited via Mechanical Turk ($N = 100$; $Range_{age} = 19$ to 67 years old, $M_{age} = 34$; 46% male, 54% female).

Procedure. We utilized the same stimuli and 2 x 2 x 2 mixed design used in Study 3A. However, after participants read each review, we first assessed how surprising they found each review by asking them the extent to which they found the review surprising or odd (1: not at all; 7: very) and thus how easy it was to understand (1: not at all; 7: very). As in Study 3A, we then asked them to report how helpful they found the review as well as their buying intentions for the corresponding product.

Results

Review helpfulness. To begin, we again conducted a 2 x 2 x 2 mixed ANOVA with product type and review emotionality as within-participants variables and counterbalancing condition as a between-subjects variable.

Replicating the results from Study 3A, we found a significant emotionality by product type interaction ($F(1, 98) = 50.13, p < .001$). This interaction once again indicated that for hedonic products, high emotion reviews were more helpful ($M = 4.64$) than low emotion reviews ($M = 3.35$; $F(1, 98) = 32.85, p < .001$). However, as before, for utilitarian products, high emotionality backfired and was deemed less helpful ($M = 4.07$) compared to low emotion reviews ($M = 4.84$; $F(1, 98) = 18.23, p < .001$). This pattern did not differ by counterbalancing condition ($F(1, 98) = .47, p = .49$).

Intention to purchase. We again replicated the results from Study 3A. There was the significant emotionality by product type interaction ($F(1, 98) = 50.00, p < .001$). For hedonic products, participants expressed greater intentions to purchase the product if the review was high ($M = 4.39$) compared to low in emotionality ($M = 3.14$; $F(1, 98) = 33.10, p < .001$). For utilitarian products, high emotion backfired and participants expressed less intention to purchase the product ($M = 3.77$) compared to low emotion reviews ($M = 4.46$; $F(1, 98) = 15.63, p < .001$). This pattern existed across counterbalancing condition ($F(1, 98) = .26, p = .61$).

Surprising nature of each review. We next investigated whether a similar pattern of results occurred when assessing how surprising participants found each review. To this end, we averaged together how surprising they found each review with how difficult they found it to understand (ease of understanding reverse-coded; $r(98) = .45, p < .001$). Results were similar when analyzing these metrics separately as well.

Using this average, we found the same pattern as we did when predicting helpfulness and buying intentions. In particular, we found that for hedonic products, low emotion reviews were more surprising ($M = 3.29$) compared to high emotion reviews ($M = 2.20$; $F(1, 98) = 58.23, p < .001$). Conversely, high emotion reviews backfired for utilitarian objects and were more surprising ($M = 3.56$) versus low emotion reviews ($M = 2.58$; $F(1, 98) = 26.04, p < .001$).

Mediation. We hypothesized that the surprising nature of a given review should then lead to participants' final judgments of that review as well as their intention to purchase the corresponding product. In particular, we hypothesized a within-subjects mediation model such that 1) expressed emotionality in each review 2) would be either more or less surprising depending on the product type and 3) that this would shape the final impact of the review.

To begin, we simplified the data by averaging together participants' helpfulness judgments and their ultimate intention to purchase the corresponding product ($r(98) = .87, p < .001$). The results are the same as when examining these variables separately.

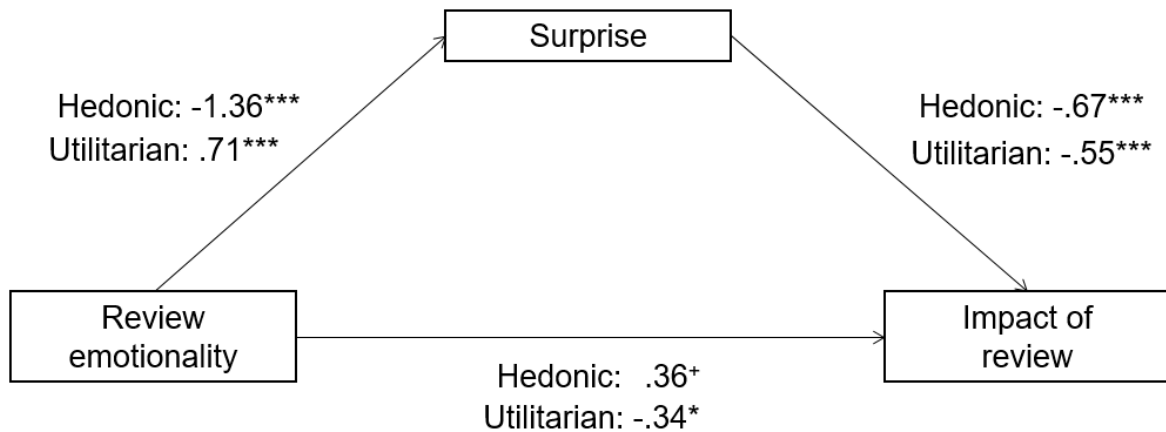
Next, in order to test the proposed mediation pathway, we conducted two mediation models: one for hedonic products and one for utilitarian products. To estimate these models, we used the MEMORE package (Montoya and Hayes 2017) which allows for bootstrapped confidence intervals of a within-subjects mediation pathway. Using this approach, a 95% confidence interval of the indirect effect using 5000 bootstrapping samples did not include zero for either the hedonic products [.51, 1.38] or the utilitarian products [-.62, -.20] (see Figure 3). These results indicated that greater expressed emotionality was less surprising for hedonic products and that this, in turn, led participants to judge the review as more helpful and increased their intention to buy the product. However, this emotionality backfired for utilitarian products where emotional information was more surprising, which then led to a decreased impact of the review.

Discussion

The results of the current experiment provide additional evidence that individuals' expectations are responsible for the downstream consequences of providing reactions that do not match the nature of the product. Indeed, participants indicated they were more surprised when reviews provided emotional reactions to a utilitarian product and unemotional reactions to a hedonic product. This surprise then led them to view such reviews as less impactful.

FIGURE 3

MEDIATION MODELS SHOWING THE RELATION BETWEEN REVIEW EMOTIONALITY, HOW SURPRISING THE REVIEW WAS, AND THE REVIEW'S FINAL IMPACT, STUDY 3B.



Note. *** $p \leq .001$, * $p \leq .05$, + $p = .11$

STUDY 4

As we have now established, consumers expect hedonic products to be described using more emotional reactions and utilitarian products to be described using more cognitive reactions; furthermore, individuals are surprised when these expectations are violated. Such violations should then make consumers wonder about the source and whether or not such reactions are trustworthy. Indeed, the effects we have seen across these studies are likely due to individuals' relative lack of trust in others' reactions. We explicitly stated this theoretical proposition at the outset and such a proposition is implicit within all of the studies we have conducted thus far. However, we have not yet directly examined this possibility. In the current study we first establish the association between trust and the reactions other individuals provide. Specifically, we hypothesized that individuals would show greater distrust of others' reactions if they did not match the nature of the product: emotional reactions to utilitarian products should be relatively distrusted whereas cognitive reactions to hedonic products should be relatively distrusted.

Method

Participants. Participants were recruited from Mechanical Turk (N = 50; $Range_{age}$ = 18 to 68 years old, M_{age} = 36; 58% male, 42% female).

Procedure. Participants were asked to select those EL adjectives that would lead them to question or have doubts about, in other words distrust, a reviewer's reaction to a given product. We showed individuals eight products one-by-one: four hedonic and four utilitarian. The four hedonic products were a "movie," "music," "vacation resort," and a "fiction novel." The four utilitarian products were a "microwave," "blender," a "book on how to program a computer," and a "non-fiction book." Thus, the design was fully within-subjects where we could compare those reactions that would be distrusted for both hedonic and utilitarian products for each participant.

For each product, participants were asked to select two to four EL adjectives that would be questionable for a reviewer to express regarding that product and that would lead them to have doubts about that reviewer and their trustworthiness. Participants had the opportunity to choose from those EL adjectives that provided a clearly positive reaction and that could be applied to at least one of the products. Based on pilot testing, we found that adjectives that provided a very mild positive reaction ("okay," "adequate," "satisfactory," "neutral," "acceptable," "reasonable," and "agreeable") tended to be distrusted across all products. Indeed, given that participants were expecting rather positive reactions to each product, these adjectives imply relatively little enthusiasm and thus led pilot participants to deduce that the reviewer was relatively less pleased with the product. Moreover, the adjectives "pro" and "healthy" could not easily be applied to any of the eight products and thus these adjectives were also not included. In total, there were 40 positive EL adjectives individuals could choose from.

Results

We summed the number of times an adjective was chosen for the hedonic versus utilitarian products. To index the extent to which each adjective was trusted for each product type, we then calculated a difference score as the number of times the reaction was selected as untrustworthy for utilitarian products minus the number of times it was selected as untrustworthy for hedonic products. We would hypothesize that the more emotional the adjective, the more times individuals would select that reaction as untrustworthy for utilitarian products. Conversely, this same relation would indicate that the less emotional the adjective, the more times individuals would select that reaction as untrustworthy for hedonic products.

We correlated this difference score with the implied emotionality of that adjective and confirmed our hypothesis: the less emotional an adjective, the more times it was selected as a reaction individuals would distrust for a hedonic product (versus a utilitarian product; $r(38) = .64$, $p < .001$). For example, the adjectives "lovable" and "exciting" were selected more often as reactions participants would distrust for utilitarian products, whereas the adjectives "useful" and "beneficial" were selected more often as reactions they would distrust for hedonic products. Moreover, this relation was specific to the adjective's implied emotionality: there was no significant correlation between the normative extremity of an adjective and the number of times it was

selected as being a reaction they would distrust for utilitarian versus hedonic products ($r(38) = .13, p = .41$).⁴

Discussion

Although the previous experiments had demonstrated the phenomenal disjunction, they had yet to investigate why such a disjunction may occur. This study provided initial evidence that reactions that mismatch the nature of the product are distrusted. As such these results provide an opportunity. Specifically, if we are able to bolster the trust individuals have in mismatching reactions, we can provide further evidence that trust underlies the disjunction we have demonstrated thus far.

STUDY 5

The current study provides direct experimental evidence of our primary theoretical proposition. In effect, if we are able to increase the trust individuals have in the person writing the review, then we should be able to lessen the effects of expressing the unexpected, mismatching reactions. To manipulate the trust participants could place in the person expressing the different reactions, we provided them with additional information about the person from whom they would be hearing about each product. In the unknown expertise condition, we sought to replicate the previous results by demonstrating that individuals distrust mismatching reactions from anonymous reviewers. In the high expertise condition, we informed participants that the reactions they were reading about came from highly-regarded experts. In this condition, participants are likely to continue to find mismatching reactions surprising, but they also may be able to justify even these reactions to some extent and, hence, not view them as so untrustworthy. Take, for instance, the connoisseur who describes the experience with a specific scotch whisky as “useful” and “beneficial.” Individuals may justify that this expert is providing a more analytical understanding of the scotch and its attributes. In a parallel fashion, consider the carpenter who describes a hammer as “amazing” and “wonderful” to use. This expert’s passion may be justified as their having experienced a truly remarkable tool – one that clearly stands out above the others he/she has used. Although these mismatched reactions may violate individuals’ expectations of how these products are typically evaluated, they may appear more understandable and, hence, more trustworthy when expressed by experts. Thus, in this condition, we not only sought to increase the overall trust individuals had in the reviewer (i.e.,

⁴ We also examined these data using a more complicated hierarchical linear modeling approach. Specifically, for each of the eight products (level 1), we summed the number of times each of the 40 adjectives (level 2) was chosen for that product. Thus each adjective had eight observations. We can then predict this total using the normative emotionality and extremity for each adjective (each variable mean-centered). Conceptually replicating the results reported in the main text, we observed an emotionality by product type interaction ($\gamma = -.74, t(277) = 7.35, p < .001$) indicating that participants selected less emotional adjectives as reactions they would distrust for hedonic products ($\gamma = -1.06, t(49.80) = 3.95, p < .001$) and, though not quite reaching significance, selected more emotional adjectives for utilitarian products ($\gamma = .41, t(49.80) = 1.54, p = .13$).

showing a main effect of expertise), but also specifically decrease the effect of mismatching (i.e., a product type by expertise interaction).

Method

Participants. Participants were recruited from Mechanical Turk. Given that we utilized a 2 x 2 fully between-subjects design, we sought to recruit 50 participants per condition to ensure a well-powered experiment ($N = 202$; $Range_{age} = 19$ to 74 years old, $M_{age} = 36$; 44% male, 55% female; 1% chose not to identify their gender).

Procedure. Participants were instructed that they would see 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 the reactions were to a music album from the rock and roll genre (hedonic product condition) whereas the other half were told the reactions were to a book on how to program a computer (utilitarian product condition).

Before seeing the reactions of the reviewers, however, we also manipulated the trust individuals could place in each reviewer. Half of the participants were told that the reactions came from an anonymous Amazon.com reviewer (unknown expertise condition) and the other half were told the reactions came from an expert reviewer (high expertise condition). If participants in the high expertise condition had also been assigned to the hedonic product (music album), they were told that the reviewer was an expert from *Rolling Stone*, a best-selling music magazine. If participants had been assigned to the utilitarian product (computer programming book), they were told that the reviewer was an expert from *Wired*, a best-selling technology magazine. Thus, the design was a 2 [product type: hedonic or utilitarian] x 2 [expertise: unknown or high] between-subjects design.

After receiving this information, participants then judged each of the 40 positive EL adjectives used in Study 4 for the extent to which they would question or trust each reaction (1: I would not question at all; 7: very questionable).

Results

Given that each participant judged multiple adjectives, we used mixed modeling to analyze the data. Specifically, we treated both participants and adjectives 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 participants and adjectives not included in the current experiment (Baayen, Davidson, and Bates 2008; Judd, Westfall, and Kenny 2012).

To construct the mixed model, we effects-coded condition such that participants were identified as being either in the hedonic (coded as '1') or utilitarian product ('-1') condition as well as in the expert ('1') or anonymous reviewer ('-1') condition. We then included the normative emotionality and extremity of each adjective (both variables mean-centered) and allowed these variables to interact with the condition variables. These variables and their interactions were used to predict the extent to which participants trusted each reaction (how questionable they found each reaction reverse-coded). We

hypothesized a three-way interaction such that, for example, individuals would trust emotional reactions to a utilitarian product less, but that such reactions from experts would be relatively more acceptable (i.e., an emotionality by product type by reviewer expertise interaction).

To begin, we found that the expertise manipulation was successful: participants tended to trust the reactions of experts more than the reactions of anonymous reviewers ($\gamma = .26$, $t(198) = 2.88$, $p = .004$). Most important, however, was the hypothesized three-way interaction between emotionality, product type, and reviewer expertise ($\gamma = -.04$, $t(7833) = 3.51$, $p < .001$; see Figure 4). For those in the unknown expertise condition, we replicated the mismatching effect we have seen thus far: the more emotional an anonymous reviewer's reaction to a hedonic product, the more participants trusted this reaction ($\gamma = .21$, $t(56.60) = 4.25$, $p < .001$); however, for utilitarian products, the more emotional the anonymous reviewer's reaction was, the less it was trusted ($\gamma = -.27$, $t(61.23) = 5.39$, $p < .001$).

This same basic pattern existed for the expert reviewers as well, but was significantly attenuated. As before, participants trusted the experts' reaction to a hedonic product more if it was more emotional ($\gamma = .11$, $t(56.05) = 2.38$, $p = .02$), but as the relatively smaller coefficient of this effect indicates, participants were more trusting of experts' cognitive reactions as well. This same attenuation occurred for the utilitarian product. Once again, participants continued to prefer more cognitive reactions to the utilitarian product, but were relatively more trusting of the expert's even more emotional reactions ($\gamma = -.18$, $t(56.60) = 3.75$, $p < .001$).

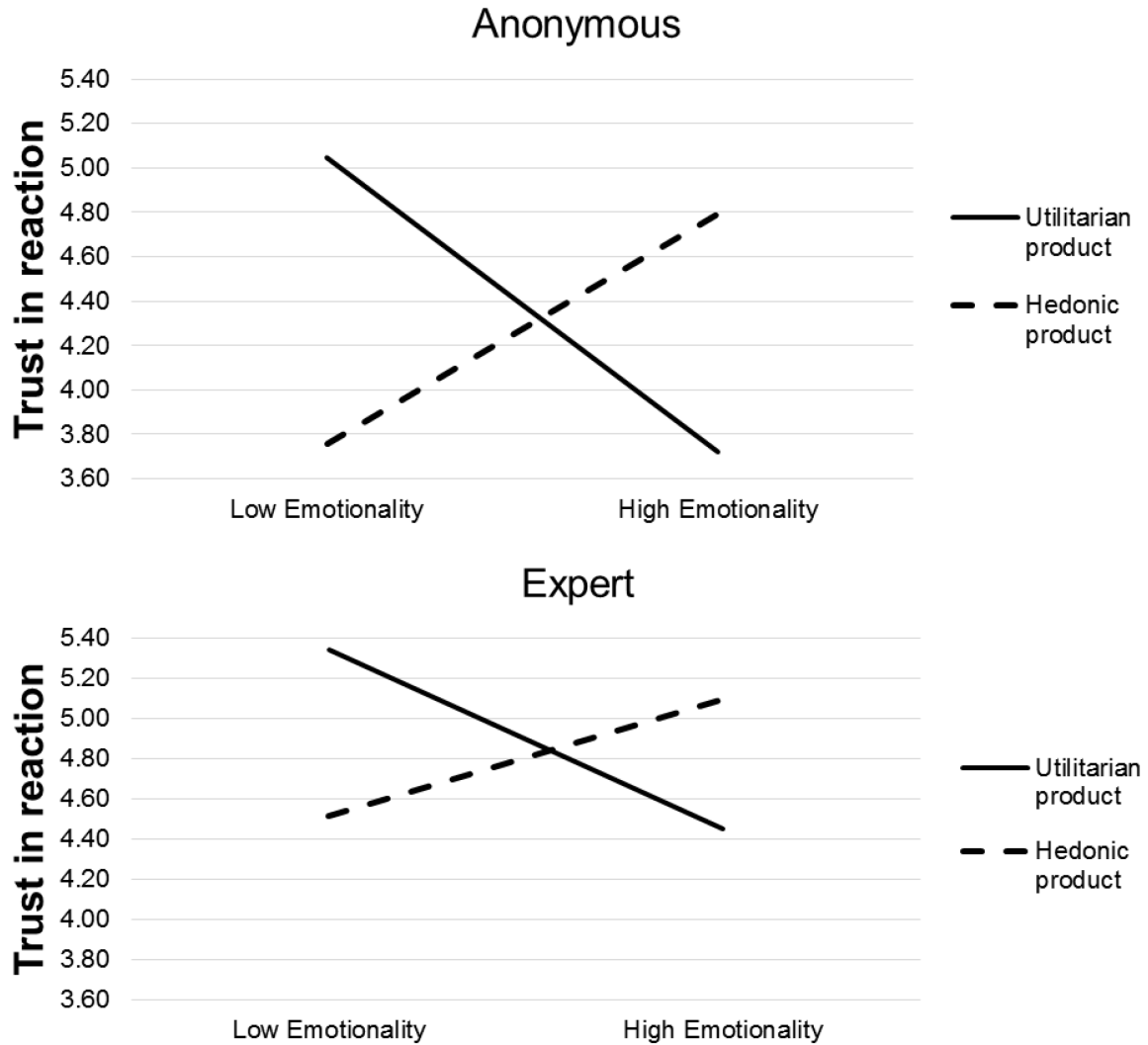
Discussion

This study provided direct evidence in support of our central hypothesis regarding trust's role in accepting others' evaluative reactions. When reviewers were described as experts in their field, individuals trusted these reviewers' reactions to a greater extent even when these reactions mismatched with the product. In effect, more expert reviewers were granted more tolerance when they use unexpected evaluative language. For example, a carpenter with 30 years of experience who expresses to someone how "amazing" and "wonderful" a hammer is, despite the surprising nature of these reactions, will be trusted to a greater extent compared to someone who has little or no expertise in carpentry. This finding assumes particular importance in the context of our primary theoretical proposition regarding the trustworthiness and diagnosticity of an individual's own emotional reactions versus those of another. As demonstrated by our earlier results, individuals weight their emotional responses to even utilitarian products heavily. Essentially, the attenuated mismatching effect in the case of a highly expert review implies that an interpersonal context can be made to resemble the intrapersonal a bit more closely when individuals can trust the mismatched reactions of the source.

Having established trust as an underlying reason for the phenomenal disjunction, we turned to demonstrate the real-world consequences of this disjunction in the next two studies. To do so, we returned to the anonymous Amazon.com reviews we utilized in Study 1.

FIGURE 4

TRUST IN REACTION AS A FUNCTION OF ADJECTIVE EMOTIONALITY, PRODUCT TYPE, AND REVIEWER TRUSTWORTHINESS, STUDY 5.



Note. Values on the x-axis represent two standard deviations above and below the mean on emotionality.

STUDY 6A

Across six studies we have now demonstrated the phenomenal disjunction such that although individuals' own emotional reactions are related to more extreme final judgments, others often find such emotionality less impactful. We demonstrated the first half of this disjunction utilizing real-world product reviews, but have relied on in-laboratory studies to examine the

second half of the disjunction. However, using the very same product reviews we introduced in Study 1, we also have the opportunity to examine the second half of this disjunction in the real world. In addition to the text and star ratings consumers issued the products, the reviews were also judged by other consumers who were visiting the Amazon.com website and thus likely interested in purchasing that product. Specifically, consumers visiting Amazon.com 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 or No). The helpfulness of each review constitutes our primary outcome of interest for the current study.

Data

We utilized the same reviews as those used in Study 1. However, some reviews from Study 1 had not been judged by other consumers and thus we used only those reviews that had helpfulness ratings associated with them. We were left with 90% of the original reviews with 23,452 reviews across 258 hedonic products, and 23,380 reviews across 258 utilitarian products ($N_{\text{reviews}} = 46,832$). Across these reviews there was a total of 555,508 helpfulness ratings ($M_{\text{per review}} = 10.68$, $SD = 32.67$) where visiting consumers had signified whether a review was helpful or not by clicking either a “yes” or “no” button after reading the review. To index the helpfulness of each review, we followed past research (e.g., 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 ($M = .67$, $SD = .34$).⁵

Results

Helpfulness. We used multiple regression to examine whether the impact of a review depended on the emotionality implied in that review as well as the product type, above-and-beyond extremity. We effects-coded product type as hedonic (coded as ‘1’) or utilitarian (‘-1’) and standardized the implied emotionality and extremity of the reviews. To test our primary hypothesis, we also entered two two-way interactions: an emotionality by product type interaction and an extremity by product type interaction.

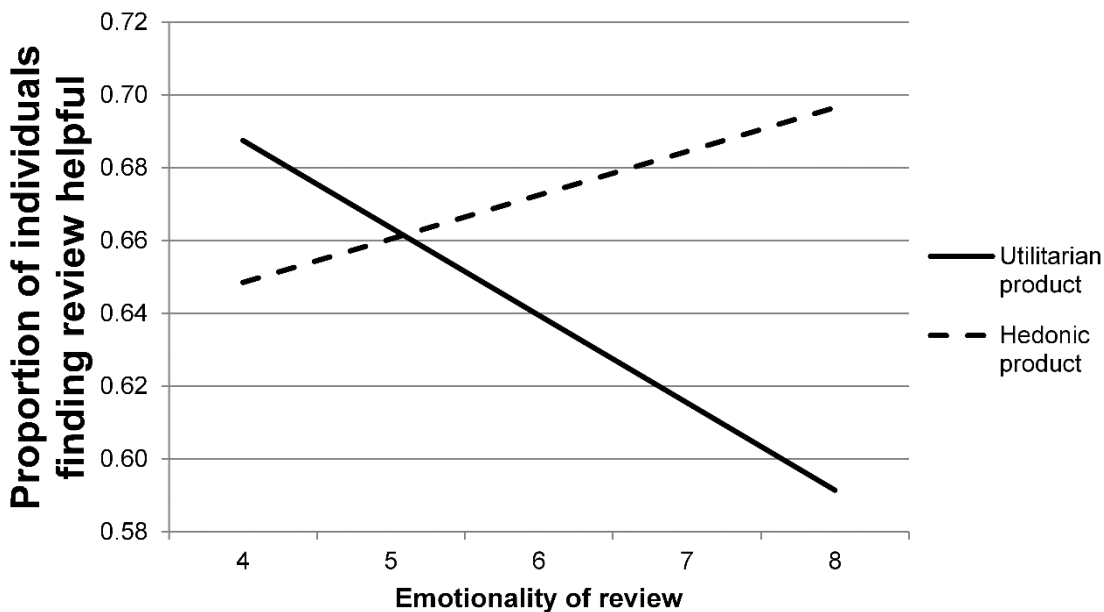
To begin, there was an effect of product type simply indicating that reviews of hedonic products were found to be more helpful overall compared to reviews of utilitarian products ($B = .03$, $t(46826) = 14.32$, $p < .001$). Furthermore, across both product types, we found that more extremely positive language was more impactful to consumers ($B = .03$, $t(46826) = 12.34$, $p < .001$). This effect of extremity makes sense as a more extremely positive review, regardless of product type, leaves less ambiguity about the merits of a product and should therefore be more convincing.

⁵ The distribution of helpfulness ratings is non-normal such that there is a large number of reviews that are considered maximally helpful (a ratio of 1) and a large number that are considered not at all helpful (a ratio of 0). Given this more bimodal distribution, we removed those reviews that were either maximally or not at all helpful and conducted all analyses again with the more normal distribution. All results were replicated with this subsample indicating that the results are robust regardless of which sample of reviews is used.

More importantly, there was a significant emotionality by product type interaction ($B = .02$, $t(46826) = 7.85$, $p < .001$; see Figure 5). For hedonic products, consumers were more likely to click “yes” they found a review to be helpful if the review expressed greater emotionality ($B = .01$, $t(46826) = 3.81$, $p < .001$). However, this emotionality backfired for utilitarian products: consumers were more likely to click “no” they did not find the review helpful with this same level of emotionality ($B = -.02$, $t(46826) = 7.35$, $p < .001$).⁶ Instead, as this latter result indicates, relatively unemotional reviews were more impactful for utilitarian products.

FIGURE 5

HELPFULNESS OF AMAZON.COM REVIEW AS JUDGED BY REAL-WORLD CONSUMERS VISITING EACH PRODUCT'S WEBPAGE, STUDY 6A.



Note. Values on the x-axis represent the approximate range of possible values in the sample.

⁶ We can also investigate the effect a review's star rating has on judgments of its helpfulness. Controlling for a consumer's summary judgment would provide us with the added benefit of accounting for the difference in star ratings we see between hedonic products – which received more positive star ratings overall – and utilitarian products. Using the same regression equation as before, we found that the more positive the review in terms of its star rating, the more helpful it was considered ($B = .06$, $t(46825) = 37.88$, $p < .001$). Furthermore, above-and-beyond this effect, all other results were replicated. Of particular interest is that the emotionality by product type interaction was significant ($B = .02$, $t(46825) = 7.69$, $p < .001$) indicating that greater emotionality was more impactful for hedonic products ($B = .01$, $t(46825) = 3.01$, $p = .003$), but backfired for utilitarian products ($B = -.03$, $t(46825) = 7.93$, $p < .001$).

Explaining mismatching reactions. As we detailed in Study 3B, reviewers who do not provide the expected reactions toward hedonic and utilitarian products can lead individuals to be surprised by the content of that review and thereby decrease its impact. Thus, any steps that a reviewer can take to either decrease such surprise or justify it should ameliorate the phenomenal disjunction. One such approach reviewers could utilize would be to explain their evaluations. For example, a reviewer might state that a printer was “amazing” *because* of all the options it had. The word *because* signals that the reviewer is explaining their evaluation of the printer and therefore may dampen the impact of the initial surprise readers have toward the mismatching reaction.

To investigate whether explaining one’s reactions decreases the phenomenal disjunction, we examined whether the effects we found above were moderated by the reviewers’ having provided reasoning for their evaluations. Specifically, we searched each of the 46,832 reviews 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 (coded as ‘1’) and less likely if it did not (‘-1’). Of the reviews, 9,877 (21%) used one of these words whereas 36,955 (79%) did not. We hypothesized that the previously documented mismatching effects would be evident for reviews that did not contain an explanation of the reviewer’s evaluation, but that such effects would be lessened for reviews that had an explanation. We used the same regression equation as above, but also included the effects-coded explanation variable and allowed it to interact with all other variables.

In line with what we would expect, there was an overall effect of explaining one’s reactions such that reviewers using one of these words were considered more helpful ($B = .02$, $t(46820) = 7.63$, $p < .001$). In addition, there was the hypothesized three-way interaction between review emotionality, product type, and whether or not the review contained an explanation ($B = -.01$, $t(46820) = 2.99$, $p = .003$). This interaction indicated that we replicated the emotionality by product type interaction for reviews that did not contain an explanation ($B = .02$, $t(46820) = 8.30$, $p < .001$) such that emotional reactions were more helpful for hedonic products ($B = .02$, $t(46820) = 4.66$, $p < .001$), but backfired for utilitarian products ($B = -.03$, $t(46820) = 7.06$, $p < .001$). For reviews containing an explanation, however, this interaction was not significant ($B = .004$, $t(46820) = .69$, $p = .49$). Thus when reviewers expanded upon their reactions and provided additional explanatory information, we did not see the phenomenal disjunction.

Discussion

In this study, we examined the impact of the phenomenal disjunction in the real world. Specifically, we found that mismatching reactions led consumers to find reviews less impactful. Moreover, in line with our theoretical reasoning, we found that if reviewers provided greater details regarding their mismatching reactions that the disjunction was lessened. The results of this study also demonstrate both halves of the phenomenal disjunction all in the same data: although individuals are all the more positive about a utilitarian product if they express emotionality toward it (Study 1),

such emotionality is distrusted by others and found to be less impactful, unless it is more fully explained.

STUDY 6B

A final approach we can take to understanding the impact of the phenomenal disjunction is to examine those reviews that won out over all other reviews and thus would be identified as a top review for that product. Top reviews on Amazon.com are particularly important as they are the reviews that are most likely to be displayed on the front page of the product. Indeed, Amazon.com often presents only a subset of reviews on the front page of each product. In order to read additional reviews, consumers must specifically click on a link to be brought to a separate page. As such, top reviews are much more likely to have an impact on consumers and their purchases. Though Amazon.com utilizes a proprietary algorithm to identify top reviews and thus the exact properties of those reviews that rise to the top are unknown, it is understandably in the best interest of Amazon.com to provide consumers with the best information possible so they will be satisfied with their ultimate purchase. Thus, top reviews are likely to be of particularly high quality and to provide pertinent information to visiting consumers.

Data

Given that the original Amazon.com data we had utilized did not signify the order in which the reviews appeared on the Amazon.com product pages, we returned to Amazon.com and extracted the positive reviews and their order as ranked by Amazon.com for a random subset of the products from above. We extracted these reviews over the month of June 2016 and thus the rankings provide a snapshot of those reviews Amazon.com deems as most important at that time. We randomly selected approximately half of the products and extracted all of the reviews for those products from Amazon.com. We were left with 109 utilitarian products ($N_{\text{reviews}} = 30,824$) and 125 hedonic products ($N_{\text{reviews}} = 98,114$) for a total of 128,938 reviews which had been judged a total of 548,355 times by visiting consumers. Given that these reviews include those that had been written since 2006 there is a larger number of reviews in total compared to the sample above.

Results

Replicating the previous results. First, we attempted to replicate the results predicting the helpfulness ratings using those reviews not contained in the original sample (i.e., using those reviews written after 2006). A total of 29,323 reviews had been judged by visiting consumers since 2006. Using this new sample, we replicated the previous results showing there was an emotionality by product type interaction ($B = .04$, $t(29317) = 10.31$, $p < .001$). Visiting consumers found emotionality more impactful for hedonic products and were more likely to click “yes” they found the review helpful ($B = .04$, $t(29317) = 10.56$, $p < .001$), but such emotionality backfired for utilitarian products and they were more likely to click “no” they did not find the review helpful ($B = -.03$, $t(29317) = 5.48$, $p < .001$).

Predicting the top reviews. We then turned to predicting the top reviews for each product for all 128,938 available reviews. When consumers ask Amazon.com to list the top reviews for a given product, Amazon.com provides ten reviews per page. Given this, we identified the top reviews as those ten reviews on this first page (coded as ‘1’) versus the reviews not on this first page (‘0’). We then used the same variables as in the above analyses, but now using logistic regression to predict the probability that a review would make it to the first page.

As hypothesized, there was an emotionality by product type interaction ($B = .15$, $\chi^2(1) = 17.34$, $p < .001$). This interaction indicated that for hedonic products, the more emotional the review, the greater the probability it would rise to the top and thus be displayed on the product’s front page ($B = .15$, $\chi^2(1) = 10.19$, $p = .001$). However, such emotionality backfired for utilitarian products where such reviews were less likely to rise to the top and thus be displayed on the product’s front page ($B = -.16$, $\chi^2(1) = 7.64$, $p = .006$).⁷

GENERAL DISCUSSION

Across five in-laboratory studies and three field studies using over 100,000 real-world reviews, we provide evidence of a fundamental phenomenal disjunction: individuals’ own emotionality relates to all-the-more extreme judgments regardless of topic, but such emotionality can backfire when described to others. Indeed, such a disjunction is inherent to the nature of being human as we are simply unable to directly experience others’ reactions. This understanding then leads to the theoretical proposition that trust underlies this disjunction. Thus, we also demonstrated that we are able to experimentally ameliorate the disjunction when enhancing the trust individuals have in others (Study 5) and that it can also be lessened when real-world online reviewers take the opportunity to explain their reactions (Study 6A).

This research adds to the burgeoning literature on word-of-mouth communications that moves past not only whether online reviews affect consumers, but how *the way* individuals express this opinion impacts others (e.g., Moore 2015; Packard and Berger in press). Indeed, scholars have recently called for a greater understanding of how consumers express their opinions and the impact this has (Berger 2014). In the current work, we demonstrate that the emotion consumers express has downstream consequences on others’ judgments and, moreover, that such emotionality impacts others above-and-beyond the positivity these consumers expressed in their reviews and the number of stars they issued their product (see Footnote 6).

This research also has implications for work on word-of-mouth communications in terms of the type of information that is likely to spread in an environment. Past research has demonstrated that more emotional content

⁷ Speaking to the robustness of these results, we also found the same pattern when using the top 20 reviews for each product. As before, there was an emotionality by product type interaction ($B = .10$, $\chi^2(1) = 13.73$, $p < .001$) indicating that for hedonic products, emotionality predicted a greater probability of becoming a top review ($B = .08$, $\chi^2(1) = 6.33$, $p = .01$), but that this emotionality backfired for utilitarian products ($B = -.11$, $\chi^2(1) = 7.43$, $p = .006$).

is more likely to be spread (Berger and Milkman 2012). As we show here, however, emotionality may not always be the most likely to spread. We demonstrate the opposite effect for utilitarian products where emotionality backfired and was actually less likely to rise to the top and therefore spread in a real-world environment. Instead, the cold, cognitive reviews were the ones more likely to “catch fire” for utilitarian products. The context of the current research provides an important difference from past work. When reviewers are expected to inform readers – as opposed to also hold their attention and entertain them as is often the case for newspaper articles (Berger and Milkman 2012) – the effect of emotionality appears to be more directly tied to nature of the topic. When one’s reaction is at odds with the topic, as in the case of providing emotional reactions toward a utilitarian product, the communication backfires and is less likely to spread.

The current work also provides evidence that feelings-based evaluations can be relied upon even for utilitarian products. Past work has demonstrated that feelings may be utilized to a lesser extent when making judgments regarding utilitarian products (e.g., Adaval 2001). However, this past work has most often concentrated on eliciting feelings that are incidental to the product itself – e.g., watching happy versus sad movie clips that are unrelated to the product – whereas we focus on those situations where the emotionality naturally arises over the course of using the product and stems from experience with the product itself. While we show that such emotionality is rarer toward utilitarian products compared to hedonic products, we nevertheless demonstrate that if individuals do have an emotional reaction, it relates to more extreme summary judgments just as it does for hedonic products.

Although not directly addressing persuasion per se, the results of this research put forth the hypothesis that emotional persuasive appeals have the potential to be more persuasive in changing others’ pre-existing attitudes for hedonic products whereas cognitive, rational appeals could be more persuasive for utilitarian products. Indeed, such a possibility is in line with past work that has shown that matching a persuasive appeal to the characteristics of the product – e.g., a product that provides a practical function versus a social identity signaling function – can lead to greater attitude change (Shavitt 1990; see Petty, Fabrigar, and Wegener 2003 for a review). We build on these results by providing evidence that the hedonic versus utilitarian nature of the product may also be important. Thus, a practical tip for marketers is that it may be more effective to focus on the emotional reactions a hedonic product can elicit from consumers and the more cognitive responses a utilitarian product can elicit.

Also within the domain of persuasion, the phenomenal disjunction puts forth a hypothesis of how consumers may attempt to persuade each other. Indeed, given that emotionality predicts all-the-more extreme judgments from consumers, it is possible that they come to associate persuasion with emotionality. Thus, when consumers are part of a direct sales or multi-level marketing program (e.g., The Pampered Chef, Mary Kay) or if they attempt to persuade their friends to visit their favorite restaurant with them, they may gravitate toward more emotional appeals. However, such an approach has the potential to backfire for more cognitive, utilitarian topics.

Indeed, the phenomenal disjunction reveals an intriguing irony. Whereas one's own emotionality is related to greater support of a product, such emotionality can backfire when expressed to others. Thus, when considering how to best impact others when communicating with them, it may serve one best to consider the fundamental separation between ourselves and others.

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