
Credibility of Anonymous Online Product Reviews: A Language Expectancy Perspective

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ABSTRACT: Online reviews play a significant role in forming and shaping perceptions about a product. With the credibility of online reviewers a frequent question, this research investigates how potential buyers assess the credibility of anonymous reviewers. Technology separates the reviewer from the review, and potential buyers are left to rely on characteristics of the review itself to determine the credibility of the reviewer. By extending the language expectancy theory to the online setting, we develop hypotheses about how expectancy violations of lexical complexity, two-sidedness (highlighting positive and negative aspects of a product), and affect intensity influence credibility attributions. We present an experiment in which favorable experimental reviews were generated based on actual reviews for a digital camera. The results indicate that two-sidedness caused a positive expectancy violation resulting in greater credibility attribution. High affect intensity caused a negative expectancy violation resulting in lower credibility attribution. Finally, high reviewer credibility significantly improved perceptions of product quality. Our results demonstrate the importance of expectancies and violations when attributing credibility to anonymous individuals. Even small expectancy violations can meaningfully influence reviewer credibility and perceptions of products.

KEY WORDS AND PHRASES: affect intensity, credibility, electronic word of mouth, eWOM, language expectancy theory, lexical complexity, persuasion, product reviews, two-sidedness.

TECHNOLOGICAL ADVANCES IN AGGREGATING ONLINE PRODUCT REVIEWS have made product review information pervasive, and consumers are relying on them to shape opinions about products and sellers. In 2008, Nielsen Online reported that eight in ten holiday shoppers read product reviews before they made a purchase decision [24]. Favorable product reviews can significantly influence potential buyers' attitudes toward products and their purchase decisions [15, 26, 35]. In fact, positive product reviews from notable reviewers can result in *substantial* increases in revenue for manufacturers [53].

Yet there is a great deal of variation in the expertise and motivation of online reviewers [32]. Product reviews are relatively easy and inexpensive to create [18], and reviewers of all types are able to contribute their opinions. Expert reviewers who have extensive experience with a product are free to contribute along with inexperienced and novice reviewers. In addition, altruistic reviewers who wish to share their experience are free to contribute along with manufacturers and related third parties (e.g., contracted marketing firms) who have an incentive to ensure their products are rated favorably [36]. The list of companies caught trying to manipulate the online reputation of their products ranges from electronics manufacturers [44] to mobile application developers [13]. With the expertise and motivation of online reviewers varying so

widely, potential buyers face the daunting task of separating credible reviews from those that are suspect. Only through proper assessment of reviewer credibility can potential buyers derive benefit from credible online reviews and avoid being unduly influenced by uninformed or manipulative reviews.

Establishing the credibility of an online product reviewer can be difficult as technology permits separation between the product review and the source. In the case of large online vendors, which is the context for our study, product reviewers are often anonymous and display little more than a user name [50]. Previous research has shown that individuals struggle to identify fraudulent reviews [42]. Efforts to understand the antecedents of product review credibility have begun to shed light on how potential buyers evaluate online reviews (e.g., [14]). We extend this inquiry by focusing on a critical component of product reviews largely ignored by previous research: the textual content of the product review. In other e-commerce contexts (e.g., buyer feedback following online auctions), the text of the review has been shown to be a critical antecedent to seller credibility [45]. In this work, we focus on the textual content of the review by extending a persuasion model based on language expectancies to the online setting with the intention of discovering how online product reviews can have an effect on purchase decisions and perception of product quality. We present an experiment wherein we manipulate textual content of a review for a digital camera. We show that violations of expectations caused by the text of the reviews significantly alter perceptions of the credibility of the reviewer. Furthermore, credibility of the reviewer, in turn, influences attitudes about product quality. Our theoretical approach, hypotheses, method, and results are discussed in the following sections.

Online Word of Mouth

LONG BEFORE EXPERIENCES WITH PRODUCTS WERE SYSTEMATIZED and recorded in a format such as online product reviews, they were exchanged by word of mouth (WOM). In fact, online product reviews are commonly considered to be the equivalent of face-to-face WOM exchanges [28]. However, Dellarocas [18] has noted several important differences between electronic WOM (eWOM) and face-to-face WOM: (1) the unprecedented scale that is achieved by low-cost, bidirectional communication capabilities; (2) the ability of online feedback community designers to precisely control and monitor the community; and (3) new challenges that are introduced in feedback communities such as the volatile nature of online identities and near complete absence of contextual cues. The last difference noted by Dellarocas is of particular importance because the paucity of contextual cues and limited information about reviewers permit product reviewers to strategically manage or alter perceptions about product quality [19].¹ In such an environment, the need to critically evaluate the credibility of reviewers is high.

With traditional WOM transmitted between family members, friends, or acquaintances, potential buyers face less uncertainty about the information because the source is known. When the source is known, potential buyers are better able to make source credibility attributions and weigh any recommendations provided through WOM [3,

23]. With eWOM, information about the source is frequently separated from the information the source provides about a product. This separation places a significant burden on the potential buyer to make credibility attributions of an anonymous source, as the basis of any attribution may be limited.

Much of the past research concerning online product reviews has ignored the effect of reviewer credibility, focusing instead on the quality, valence, and dispersion of online product reviews directly, and their effect on product sales (e.g., [12, 15, 16, 22, 43]). Research making this direct link has often produced contradictory and inconclusive linkages between qualities of reviews and purchase decisions, with some researchers claiming that review quality and valence are most influential on purchase decisions [15, 16, 43] and others claiming that dispersion [22] or familiarity, regardless of valence and quality, is most influential [12].

One possible reason for this inconsistency is that such direct linking does not consider the potential effects of credibility attributions on the persuasiveness of the review or the degree to which the review can be relied upon in forming perceptions about a particular product. The importance of credibility in online transactions has long been established, however, much of this work on credibility has centered on the seller or vendor of products (e.g., [1, 37, 45]). As online vendors become more popular and more frequently used, the uncertainty surrounding transacting with them decreases, reducing the need for credibility attributions of vendors [12]. However, potential customers may still turn to online product reviews to resolve uncertainty about a specific purchase decision (e.g., "Which product do I buy?"). Product reviews may alleviate much of the uncertainty, but only if the reviewers are credible. There have been few studies examining the credibility attribution of online reviewers, who in large part shape online product reputations via buyer feedback.

Another potential reason for inconsistency of past product review research is that the theoretical lens used in the past often minimizes the motivations of product reviewers (e.g., [14]). While the motivations of individual reviewers may vary widely, from genuine altruism to strategic manipulation, all of these motivations are tied together by one common trait: they explicitly or implicitly influence the perceptions of future potential buyers. Product reviews offer an evaluation of a product, and with the evaluation likely comes variations of common rhetorical strategies crafted to explain or defend a position. Even seemingly benign, informational product reviews usually contain arguments or evidence supporting the reviewers' ratings. Such arguments and evidence may explicitly or implicitly influence future readers.

When examining how product reviews affect attitudes about product quality or purchase decisions, an appropriate theoretical lens for evaluating the effect of product reviews should be based on social influence. Some researchers have adopted theories of influence in their examinations of product reviews (e.g., [43]); however, many have not. The limited work that adopts an influence perspective and concerns the credibility of product reviews has shown that credibility of product reviews plays an important role in their acceptance. Cheung et al. [14] demonstrated that antecedents to credibility generally fall into two categories: informational and normative. Furthermore, they demonstrated the link between credibility and review acceptance, and

identified several key antecedents to review credibility such as argument strength, source credibility, confirmation of prior beliefs, recommendation consistency, and recommendation rating. These antecedents are important to understand and highlight. However, the list excludes a critical influence on the credibility of product reviews: the language characteristics reviewers exhibit within their product reviews. Product review research has argued for review contents' primacy over simple numeric ratings in exploring review effects on purchase decisions [15], and e-commerce research aside from product reviews highlights the importance of the review text in buyer–seller exchanges following online auctions [45]. Although limited in capacity, it is through the text comments that potential buyers can derive information about an anonymous reviewer and therefore assess the reviewer's credibility.

Theory and Hypotheses

THE LANGUAGE EXPECTANCY THEORY (LET) [8] forms the foundation that guides our inquiry of the influence of product reviews. LET is a theory of social influence that describes the effects of language characteristics from groups of individuals on attitude change. LET differs from expectation confirmation/disconfirmation theory described in past management information systems (MIS) research (e.g., [2, 52]) by its focus on credibility, influence, and language-based influence attempts. Therefore, the perspective offered by LET is ideally suited to examine the effect of properties of review text on perceptions of reviewer credibility and perceptions about the product. However, LET has been limited in its application to in-person exchanges. We offer an extension of this theory to technology-enabled, asynchronous message exchanges that occur between a presumed past purchaser and a potential buyer. The present study also extends the argument that individuals' expectations about linguistic behavior are predictive even in the absence of "traditional" source cues.

LET was first formulated by Burgoon and colleagues [7, 8] in response to inconsistent empirical findings that suggested that multiple, seemingly contradictory verbal strategies could be persuasive when employed by different people. For example, aggressive *and* unaggressive verbal strategies were shown to be effective when employed by some individuals. However, the effectiveness of the verbal strategy was not consistent across all individuals. Only certain people were successful using aggressive strategies while others were not. In fact, some people who demonstrated aggressive verbal strategies were actually less persuasive [7]. Thus, Burgoon and colleagues surmised that persuasiveness was not only driven by strategies used during an interaction but also by who the sender is and what the message receiver expects from the sender.

Key to LET is the notion that individuals develop cultural and sociological expectations about language behaviors based on one's experiences, and these expectations affect individuals' acceptance or rejection of persuasive messages [8]. Through systematic review of senders and persuasive strategies used by those senders, it was demonstrated that entire social categories of senders "were bound by relatively rigid normative expectations of what was 'appropriate' or expected communication behavior. Such expectations were not unique to specific communicators, but to aggregates of

like individuals” [9, p. 122]. Example groups include members of institutions (e.g., school administrators) or professions (e.g., doctors) [4].

Researchers investigating which persuasion techniques are effective from various sender groups have noted that some sender groups are privileged and are permitted to employ a variety of techniques and still remain persuasive [9]. For example, LET proposes that senders from privileged groups may use language either high or low in intensity or compliance-gaining aggressiveness and remain persuasive, whereas senders from nonprivileged groups will be more persuasive if they employ only less aggressive, prosocial compliance gaining attempts. The range of persuasion techniques a sender may employ and remain effective is called a sender’s *bandwidth*.²

When a sender uses a persuasive technique that is outside of the sender’s bandwidth, the sender has committed an *expectancy violation*. The senders’ language may contain expectancy violations of two types: positive and negative violations. Use of language that negatively violates cultural and sociological expectations (e.g., being too aggressive) undermines the credibility of the sender, limits the persuasiveness of the message, and results in no attitude change or changes in attitude opposite to what the message sender intended. Positive violations of language use, in contrast, increase credibility, foster persuasion, and increase the likelihood the message receiver will adopt the advocated attitude. Positive violations stem from two sources: “1) when the enacted behavior is better or more preferred than that which was expected in the situation, or 2) when negatively evaluated sources conform more closely than expected to cultural values, societal norms, or situational exigencies” [7, p. 30]. Thus, influencing the attitudes of others is the result of a message sender employing language that satisfies or positively violates receiver expectations of the group of which the sender is part.

The unique context of online product reviews varies considerably from the context in which LET has traditionally been applied. We consider context replicating review forums in place at notable online retailers (e.g., Amazon.com, Overstock.com, Newegg.com) where reviewers typically rate products (e.g., 4/5 stars) and provide narrative supporting their rating. In such instances, there are few requirements to create an account that permits submission of online product reviews and little (if any) identifying information is typically displayed to potential buyers. Under such conditions, there is considerable uncertainty surrounding the characteristics of the product reviewer. Even if the reviewer chooses to reveal characteristics about him- or herself, the potential buyer knows that the reviewer could be lying, and in current forums there are few controls to guard against such deception [19]. In this context, the potential buyer knows only the contents of the review and that a reviewer was sufficiently motivated to write it.

The technology-facilitated separation of reviewer from review fundamentally changes the application of LET in an online setting. Much of what LET proposes regarding expanded bandwidth based on membership in observable social groups (e.g., doctors or school administrators) may not apply because these social groups are not apparent and are easily misrepresented to potential buyers.³ Without apparent group membership, anonymous or unfamiliar online reviewers will be afforded a narrow bandwidth of permissible persuasion techniques. Online reviewers’ deviations from this narrow bandwidth will result in expectancy violations that in turn affect potential

buyers' credibility attributions. Because little is known about product reviewers, potential buyer expectations are likely to be the product of common characteristics of other online reviews, past experiences with product reviews, and WOM recommendations. We consider all these sources of expectations in this study. Given an online reviewer's increased susceptibility to expectancy violations due to his or her narrow bandwidth and the paucity of alternative cues indicating credibility, the textual properties of the review will be especially poignant in influencing reviewer credibility.

Language Expectancies and Credibility

A great deal of work has addressed how credibility is defined and established during in-person and online interaction (e.g., [38, 39, 51]), and researchers have begun extending this effort to eWOM interactions (e.g., [14]). To this budding research, we propose three expectations of review narratives, which if violated, will influence the perceptions of reviewer credibility: lexical complexity, two-sidedness, and affect intensity. Furthermore, we suggest that changes in reviewer credibility in turn affect perceptions of product quality and intentions to purchase the product.

To examine what a potential buyer may rely on when making a credibility assessment, we turn to early MIS research when users of Usenet faced a problem similar to that posed by anonymous product reviews. Usenet was a set of online communities formed around areas of common interest. Often, questions were posted to the community that required the expertise of the community members. When Usenet contributors provided the requested information, there was little to differentiate credible contributors from noncredible contributors. In addressing this issue, Donath [21] adopted a biological approach to assessing credibility and suggested that, like in biological systems, users in online communities will likely rely on credibility cues that are most difficult to falsify (e.g., those cues directly tied to identity). However, in the case of Usenet contributions (and online product reviews), identity is obscured and can be manipulated. This makes irrelevant any autobiographical information supplied by the reviewer.⁴ Instead, Donath [21] described how certain language used in the Usenet contribution can be difficult to accurately mimic and be helpful in determining the credibility of a contributor. We propose a similar tactic for assessing the credibility of online product reviewers using the lexical complexity of the review. *Lexical complexity* is demonstrated by a high amount of technical terms, longer words, and more complex sentences. Out of the available information to a potential buyer, lexical complexity is difficult to believably fabricate as a reviewer must have (or at least appear to have) necessary experience and know-how to accurately describe the performance of a product, and misused terms and poor sentence structure will flag a suspect review (e.g., [55]). In other words, if a reviewer appears to have expert knowledge and that knowledge is articulately communicated in the review, a potential buyer reading the review will attribute greater credibility to the reviewer.

Recruiting and sustaining expert contributors are common challenges facing many online communities, yet are key to their success [54]. Thus, it is likely that reviewers who appear to have and can clearly articulate expert knowledge will be in the minority

of product reviewers. Across a variety of products, researchers have demonstrated that detailed, in-depth reviews are much less common than shorter reviews [41]. Therefore, we propose that, on average, online reviews aggregated by large retailers are unlikely to demonstrate high levels of lexical complexity, resulting in an expectation of moderate to low lexical complexity. Furthermore, any reviewers who demonstrate high lexical complexity would create a positive expectancy violation. The result of this positive expectancy violation would be an increase in credibility attributed to the reviewer. Thus,

Hypothesis 1: High lexical complexity in a product review increases the likelihood of a positive language expectancy violation, which increases reviewer credibility.

With technology facilitating the separation of product reviewer from review, a potential buyer may also turn to the two-sidedness of the product review to assist in credibility assessment. *Two-sidedness* is shown as the reviewer illustrates both the positive and negative aspects of a particular product. In marketing research, such two-sided arguments have been shown to be more influential on belief change, induce fewer counterarguments, and result in less source derogation [33, 34]. As proposed by Crowley and Hoyer [17], a low to moderate amount of negative information should increase the credibility of product reviewers.

Consistent with Crowley and Hoyer's [17] proposition, we hypothesize that the effect of two-sidedness on credibility is the result of an expectancy violation. During marketing campaigns, message recipients are bombarded with messages attempting to cast the advocated product in a positive light. The small amount of negative information may increase the probability that the review will be processed but not rejected or counterargued [17]. Online product reviews, similar to marketing campaigns, advocate a certain opinion about a product. A small amount of negative information in an otherwise positive review may contribute to a perception of objectivity and be seen as an unexpected acknowledgement that, while a product is exceptionally good and worth purchasing, it is not perfect. A small amount of negative information about the product may therefore be viewed as a positive expectancy violation and the message would be treated as more accurate and representative of the truth.

The majority of online product reviews are very one-sided in favor or against a particular product. For example, product reviews for over 2,300 books across two different vendor Web sites were overwhelmingly positive [15]. As in one-sided messages in marketing campaigns, we argue that this prevalent lack of balance contributes to an expectation of one-sidedness when evaluating anonymous reviewers. Therefore, a reviewer who presents both positive and negative information may increase the likelihood that a positive violation of a potential buyer's expectations takes place. This violation would then, in turn, increase credibility attributed to the reviewer. Therefore,

Hypothesis 2: Two-sidedness in a product review increases the likelihood of a positive language expectancy violation, which increases reviewer credibility.

Previous MIS research examining emotional expressions in online product reviews have suggested a negative effect of affect on review quality resulting from the subjective nature of the language. For example, Park et al. [43] suggest that rather than contributing objective, fact-based reasoning for a review's conclusions, reviewers who use mainly emotional expressions create reviews that are subjective and not well supported. In this study, we expand on this observation using insight gained through the application of LET and examine the process by which the intensity of affect influences perceptions of reviewer credibility.

Affect intensity is measured by the amount of emotion-laden words in the review narrative and is used to gauge how strongly a reviewer holds a particular view. For example, if one reviewer commented, "I love this product," and another reviewer commented, "This product does what I need," both reviewers would be conveying a positive attitude about the product; however, the first would be higher in affect intensity because of the emotion-laden word "love." The level of affect intensity is a manifestation of how strongly the reviewer endorses the position described in the review.

According to LET, a narrow bandwidth will be afforded to anonymous online reviewers because any memberships a reviewer may have in privileged groups would be obscured or easy to forge using technology. Accordingly, anonymous reviewers are essentially limited in how forcefully they can state their opinions and still be found credible. This limitation has been noted in other contexts where bandwidth is narrow [27] and it comes about because of expectations placed on reviewers by potential buyers. It is not solely the presence of affect, per se, that influences credibility. It is the combination of expectations and the presence of affect that produces this effect [5, 6]. In essence, the reviewer is asserting a strong opinion that overreaches the bandwidth allotted the reviewer, and the reaction of a potential buyer reading the review is a negative expectancy violation [8, 9]. This negative violation then results in a decrement of credibility attributed to the reviewer. Thus,

Hypothesis 3: High affective intensity in product reviews increases the likelihood of a negative language expectancy violation, which decreases reviewer credibility.

Credibility, Perceptions of Product Quality, and Intent to Purchase

In past research concerning online product reviews, researchers have made a theoretical leap from properties of product reviews to purchase decisions with mixed results [15, 22]. While acknowledging that product reviews can certainly influence purchase decisions, we adopt a more nuanced approach for understanding the effects of review characteristics on purchase decisions that considers the level of credibility attributed to the reviewer. Such a conceptualization may assist in moving past previous, sometimes conflicting research findings. It is the additional step of attributing credibility to a reviewer that affects how a product review will influence perceptions and intentions about a product. Characteristics of the reviewer and the review may appear to directly influence potential buyer intentions and perceptions, but without considering the effect of credibility, these apparent relationships may be unstable.

As we stated previously, a reviewer's purpose (whether benevolent or malevolent) in providing a review is to influence the perceptions of future potential buyers. This reasoning was the basis for using a theory of social influence to examine the effect of product reviews. There has been a great deal of research investigating the link between credibility and persuasion that strongly suggests a positive relationship between the two [31]. This linkage between credibility and persuasion has also been echoed in the LET research [10].

We further probe this link between persuasion and credibility within the unique context of online product reviews. We argue that the effect of the message within this context will be manifest in perceptions of product quality and intentions to purchase. Favorable reviews supplied by credible reviewers should therefore increase perceptions of product quality and purchase intentions. This effect has been demonstrated with online reviewers who are known and have a high level of credibility (e.g., reviewers for the *Wall Street Journal*) [53]. We extend this relationship to anonymous reviewers who establish credibility by positively violating language expectations. In other words,

Hypothesis 4: For a favorable review, reviewer credibility will be positively related to the potential buyers' perceptions of product quality.

Hypothesis 5: For a favorable review, reviewer credibility will be positively related to the potential buyers' intentions to purchase the product.

In this study, we limit our examination of the effects of product reviews to positive reviews that recommend a particular product. This focus was adopted for three reasons. First, positive reviews may be more common. Evidence for this can be seen in online review ratings for a large sample of books across two separate vendor sites. The percent of five- and four-star reviews was 72.9 percent for the first site and 86.5 percent for the second site [15]. Second, published accounts of organizations attempting to manipulate the online reputation of their products suggest that these attempts are made through posting fraudulent positive reviews (e.g., [13, 44]). This suggests a greater need for potential buyers to assess positive reviews when determining reviewer credibility. Finally, positive and negative customer feedback do not appear to influence purchase decisions in consistent, but opposite, directions (for a review, see [18]). In other words, the effect of negative feedback may operate by a mechanism not mirrored by positive reviews [29, 30], which likely requires systematic study of its own. As positive reviews are more common and more often the subject of credibility assessment, positive reviews were selected as the focus of this study.

Control Variables

In investigating the effects of lexical complexity, two-sidedness, and affect intensity on reviewer credibility and, in turn, the effects of reviewer credibility on perceptions of product quality and purchase intentions, it is important to consider three control variables that have been shown to be influential in past research. First, because we are dealing with the credibility of a particular reviewer, it is important to consider how

credible potential buyers find online product reviewers in general. We account for this trait variable by including *general reviewer credibility* in all the analyses. Second, *involvement* with the task of selecting a digital camera was recorded and included in all the analyses. Involvement captures how important and relevant a task is, and has repeatedly been shown to influence the attitudes of potential buyers [46] and influence how product reviews are interpreted [43]. Finally, during the experiment we used an actual product that was for sale on common vendor Web sites. Attitudes about the product brand or manufacturing company have been shown to be an important influence on perceptions of product quality [47]. Therefore, we captured *brand attitudes* about the brand reputation and quality of products that are manufactured by the company and included these attitudes in all the analyses.

Method

WE EXPLORED THE EFFECTS OF LANGUAGE EXPECTANCY VIOLATIONS on assessments of credibility and the effects of credibility assessments on perceptions of product quality and purchase intentions via a controlled, two-part laboratory experiment. To conduct this research, experimental reviews were designed in a multistep process. First, 435 actual product reviews for 4 similar digital cameras (including the Nikon camera used in the study) were coded to establish what participants should expect. Second, experimental reviews were created that satisfied or violated these expectations. Finally, the reviews underwent two pilot tests to ensure that the manipulations were perceivable and violated expectations.

Reviewer credibility was assessed during the two-part laboratory experiment where general reviewer credibility and brand attitudes were established in the first part and involvement and credibility of the experimental reviewer were captured in the second part. Details of the experiment are described in more detail below.

Participants

A total of 255 students enrolled in business courses at a large midwestern university participated in this study and received course credit for participating. Twenty-two of the respondents did not complete both parts of the experiment, therefore, their partial responses were excluded from the analysis. In addition, three responses were excluded after their credibility assessments were deemed to be outliers (greater than 2 interquartile ranges from the median). This left 231 valid responses, which were included in the analysis. The mean age of the participants was 21.4 and ranged from 18 to 54. A total of 139 males and 92 females participated in the study. Among the participants, 7.4 percent were Asian/Asian American, 3.9 percent were African American, 4.8 percent were Latino/Hispanic, 0.4 percent were West Indian, 76.6 percent were white/non-Hispanic, 3.9 percent were Native American, and 3.0 percent identified themselves as Other. This study received approval from an institutional review board.

The participants reported they made an average of 1.5 online purchases per month (ranging from 0 to 10) and made their last online purchase an average of 2.0 months

ago (ranging from less than 1 month to 10 months ago). Of all the participants, 22.8 percent reported that they occasionally seek advice on purchases over \$200 from anonymous reviewers. Nearly 40 percent of the participants (39.7%) reported that they frequently, very frequently, or always seek advice from anonymous reviewers on purchases over \$200.

Stimulus Materials

To ensure that the manipulations in the experiments would generate expectancy violations, the stimulus materials were created based on actual product reviews. The stimulus creation process involved several steps, the first of which was collection and coding of actual product reviews. The prevalence and characteristics of actual reviews form the basis for expectations and, by extension, violations of expectations (see [7]). For example, if the number of one-sided reviews is large and a potential buyer has encountered them in the past, the potential buyer will likely expect reviews to be one-sided and a two-sided review will likely be an expectancy violation.

To gauge the level of lexical complexity, two-sidedness, and affect intensity, actual product reviews were randomly selected from Nikon, Sony, Cannon, and Olympus digital camera product Web pages. All the reviews came from the same online retailing site, and all the digital cameras had roughly the same capabilities and options. These product reviews were then examined by two or three trained coders to determine the level of lexical complexity, two-sidedness, and affect intensity for each review. The coders were instructed to rate on a scale of 1 (strongly disagree) to 7 (strongly agree) whether or not reviews demonstrated high levels of each review characteristic. Complete coder instructions are described in the Appendix. A total of 435 reviews were evaluated, and coding demonstrated that low levels of semantic complexity, lexical complexity, and affect intensity are common across all the cameras. The results of the coding are summarized in Table 1.

Second, product reviews were created for all combinations of high and low semantic complexity, lexical complexity, and affect intensity. This was done by creating a base product review and then adding language to increase lexical complexity, two-sidedness, or affect intensity. Therefore, the review in each condition contained a consistent overall recommendation, and arguments in support of the recommendation also remained constant. However, the way the recommendation was delivered (the language) varied. The text of the base product review along with the changes based on condition are illustrated in Table 2.

The product reviews were then embedded in eight separate product Web pages that were modeled after a popular online retailer's design with the image, short description, and pricing and shipping information listed at the top, manufacturer's product description provided next, and the single product review at the bottom. Across conditions, all of the information on the product Web pages remained consistent with the exception of the positive review, which varied according to condition. The header of each review was the same and included a rating of four out of five stars, a title of "A cool little

Table 1. Coding Results of Actual Product Reviews

Characteristics	Reliability (α)	Nikon (SD)	Sony (SD)	Cannon (SD)	Olympus (SD)	Total (SD)
Number of reviews		99	113	103	120	435
Lexical complexity	0.76	1.65 (0.93)	1.81 (1.23)	1.65 (0.89)	1.75 (0.97)	1.72 (1.02)
Two-sidedness	0.63	2.00 (1.61)	1.85 (1.68)	1.58 (1.53)	2.12 (1.49)	1.90 (1.59)
Affect intensity	0.69	2.79 (0.97)	2.70 (.91)	3.46 (1.37)	3.10 (1.12)	3.00 (1.13)

Note: SD = standard deviation.

Table 2. Experimental Reviews with Treatment Conditions

Condition	Review text
Low lexical complexity; low two-sidedness; low affect intensity	This camera does what I expect it to. First, it is very small and fits into my pants or coat pocket so I can get shots when chances come up without carrying a bigger camera. The camera provides great close up shots and good wide shots. There is little time between pressing the button and taking the picture so you can get shots quickly. Finally, the pictures it takes are well lit and clear. Overall, a good small digital camera.
Language in high lexical complexity is in square brackets	<i>{I really like this camera.}</i> It does <i>[everything]</i> I expect it to. <i>[Foremost]</i> , it is very <i>[compact]</i> and fits <i>{nicely}</i> into my pants or coat pocket so I can get <i>{beautiful}</i> shots
Two-sided language is in parentheses	when <i>[opportunities]</i> come up without <i>{the annoyance}</i> of carrying a bigger <i>[DSLR]</i> . The <i>[180mm-equivalent Nikkor lens and high megapixel count]</i> provide <i>{lovely}</i> close up shots and <i>{gorgeous}</i> wide <i>[angle]</i> shots. The <i>[shutter response time is fast]</i> so you can capture shots quickly.
Language in high affect intensity is in curly brackets	Finally <i>[the S550's]</i> <i>[image stabilization and high ISO help make pictures it takes]</i> <i>{marvelously}</i> well lit and <i>{crystal}</i> clear. <i>{The only complaints I have are that there is a slight delay between what you see and what is shown on the view screen and the controls take some time to learn.}</i> Overall, a good small digital camera. <i>{I love it!}</i>

camera,” a reviewer user name (without any additional reviewer information), and the review posting date. A sample product Web page is shown in Figure 1.

Finally, two pilot experiments were conducted to test the review manipulations. The first pilot was designed to compare the experimental reviews with the actual reviews and to determine if the experimental reviews would generate violations of participants' expectations. The first pilot involved nine participants who were asked to evaluate the level of lexical complexity, two-sidedness, and affect intensity for all eight reviews using the same procedures the coders used in rating actual reviews (described in the Appendix). Paired *t*-tests revealed that the pilot participants perceived differences in high versus low levels of lexical complexity, two-sidedness, and affect intensity. The mean ratings for each condition are shown in Table 3.

The ratings were then examined together with the ratings of actual product reviews (see Table 1). The coders and pilot participants evaluated the reviews on the same scale, and the mean high ($M_{\text{Pilot-High}}$) and mean low ($M_{\text{Pilot-Low}}$) ratings are shown together with the mean ratings from actual product reviews (M_{Actual}) for each review characteristic in Figure 2. In every case, $M_{\text{Pilot-Low}}$ was within one standard deviation of the M_{Actual} , suggesting that the low conditions for each review characteristic likely fell within the participants' expectations. In addition, for each characteristic, $M_{\text{Pilot-High}}$ was greater than 2 standard deviations away from M_{Actual} , suggesting that the high conditions likely fell outside of the participants' expectations and constituted expectancy violations.

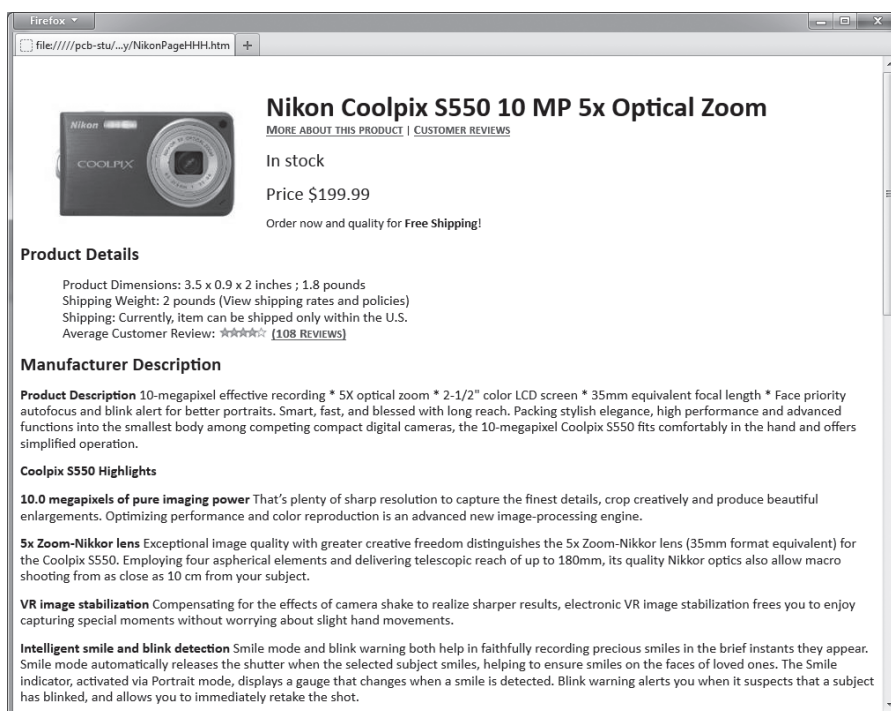


Figure 1. Sample Product Web Page

Based on this initial work in developing and testing the stimulus materials, we were confident that the conditions used in this experiment would violate the participants' expectations.

The second pilot experiment examined whether participants would be able to discern levels of lexical complexity, two-sidedness, and affect intensity without prior exposure to the definitions of the review characteristics and without seeing all eight reviews. Twenty participants were recruited from a large midwestern university to take part in the pilot experiment. Each participant was shown an experimental product review and was then asked to rate the review.⁵ Independent samples *t*-tests were then performed to identify perceived differences between the high and low conditions for each review characteristic. As shown in Table 4, the participants were able to perceive high and low levels of each review characteristic.

Procedures

The experimental, fully crossed design was a 2 (lexical complexity: high versus low) × 2 (two-sidedness: high versus low) × 2 (affect intensity: high versus low). The participants initially completed attitude measures concerning product reviews and reviewers in general as well as described their past online shopping behavior and how product reviews are considered in their shopping activity. During the initial

Table 3. Differences in High Versus Low Levels of Lexical Complexity, Two-Sidedness, and Affect Intensity (Pilot 1)

Characteristics	Conditions		Tests	
	High (SD)	Low (SD)	<i>t</i> (8)	<i>p</i>
Lexical complexity	5.31 (0.87)	2.67 (0.66)	4.80	0.001
Two-sidedness	5.64 (0.86)	2.25 (1.39)	4.77	0.001
Affect intensity	5.38 (0.85)	2.58 (1.24)	6.64	< 0.001

Note: SD = standard deviation.

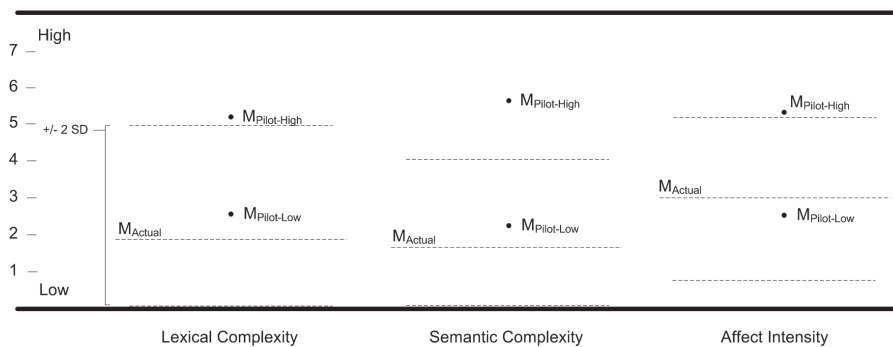


Figure 2. Comparison of Experiment Condition from Pilot Test and Actual Product Review Characteristics

survey, general reviewer credibility and attitudes about Nikon cameras were captured. After a two- to four-day lapse, the participants were randomly assigned to one of the experimental conditions and were exposed to the corresponding product Web page. They then completed a final survey during which involvement and credibility of the experiment product reviewer were captured. As a check to ensure that the participants viewed the product Web page, the participants also reported the name of the product and reported whether or not they viewed the product review. The participants then viewed a second product Web page and completed an additional survey whose results are not reported here.

Measurement

Online reviewer credibility was assessed twice during the study. Credibility was first captured as a general measure of all the reviewers and second as an evaluation of the author of the experimentally manipulated review. Reviewer credibility serves as both a

Table 4. Differences in High Versus Low Levels of Lexical Complexity, Two-Sidedness, and Affect Intensity (Pilot 2)

Characteristics	Conditions		Tests	
	High (SD)	Low (SD)	<i>t</i> (18)	<i>p</i>
Lexical complexity	3.92 (1.62)	2.38 (1.41)	2.19	0.042
Two-sidedness	4.64 (1.69)	3.00 (1.58)	2.22	0.040
Affect intensity	4.82 (1.83)	2.22 (1.01)	3.73	0.002

Note: SD = standard deviation.

dependent measure (for demonstrating the effect of lexical complexity, two-sidedness, and affect intensity) and an independent measure (for influencing perceptions of quality and intentions to purchase). Psychometric properties of credibility, covariates, perceived quality, and purchase intentions are listed in Table 5; all the items are listed in the Appendix.

Results

BEFORE ANY ANALYSIS WAS PERFORMED, the participant responses were examined to determine if the majority of the participants actually viewed the product Web page and read the experimental product review. Among the participants, all but one correctly recalled the name of the product being reviewed, indicating they viewed the product Web page, and 94.3 percent of the participants reported that they read the product review.

To test the first three hypotheses, a three-way factorial analysis of covariance (ANCOVA) was performed on the dependent variable (experiment reviewer credibility) with lexical complexity, two-sidedness, and affect intensity as independent variables. General reviewer credibility, involvement, and brand attitudes served as covariates. The means and standard deviations of the participants' assessments of reviewer credibility for each condition are reported in Table 6.

Before any tests were performed, assumptions of normality were verified. Within each treatment group, ratings of credibility showed only slight skewness and kurtosis. Levene's test of error variances was not significant ($F(7, 223) = 1.60, p = 0.14$). Therefore, the data satisfied the assumptions necessary for parametric testing and the tests continued. The overall model was significant ($F(10, 220) = 11.23, p < 0.001, R^2 = 0.34$).

The effect observed for an expectancy violation of lexical complexity on reviewer credibility did not reach a significant level ($F(1, 220) = 0.08, p = 0.78$), with no difference between high ($M = 4.64, SD = 0.85$) and low lexical complexity ($M = 4.71,$

Table 5. Psychometric Properties of the Major Study Variables

Variable	Number of items	Alpha	Mean	Standard deviation	Potential range	Actual range	Skew
Experiment reviewer credibility	4	0.86	4.67	0.85	1-7	2.25-6.75	-0.40
General reviewer credibility	4	0.84	4.63	0.87	1-7	1-6.75	-0.71
Involvement	7	0.92	4.45	1.43	1-7	1-7	-0.48
Brand attitudes	5	0.92	5.21	1.04	1-7	1-7	-0.49
Perception of quality	3	0.73	5.21	0.78	1-7	2-7	-0.59
Purchase intentions	2	0.96	3.15	1.32	1-7	1-7	-0.05

Table 6. Reviewer Credibility Means and Standard Deviations of Treatment Groups

Condition group	<i>N</i>	Mean reviewer credibility (SD)
High lexical complexity; two-sidedness; high affect intensity	35	4.63 (0.88)
High lexical complexity; two-sidedness; low affect intensity	25	4.86 (0.72)
High lexical complexity; not two-sided; high affect intensity	35	4.59 (0.85)
High lexical complexity; not two-sided; low affect intensity	34	4.54 (0.93)
Low lexical complexity; two-sidedness; high affect intensity	22	4.83 (0.63)
Low lexical complexity; two-sidedness; low affect intensity	22	5.07 (0.81)
Low lexical complexity; not two-sided; high affect intensity	24	4.44 (0.82)
Low lexical complexity; not two-sided; low affect intensity	34	4.58 (0.91)

Note: SD = standard deviation.

SD = 0.84). This finding fails to support H1 and was not in the hypothesized direction. An expectancy violation of two-sidedness did exert a significant effect on reviewer credibility ($F(1, 220) = 9.63, p < 0.01$, partial $\eta^2 = 0.04$), as reviews high in two-sidedness ($M = 4.82, SD = 0.79$) were rated higher in reviewer credibility than reviews with low two-sidedness ($M = 4.55, SD = 0.87$). This finding is consistent with H2. An expectancy violation of affect intensity also exerted a significant effect on reviewer credibility ($F(1, 220) = 4.79, p = 0.03$, partial $\eta^2 = 0.02$), as reviews low in affect intensity ($M = 4.72, SD = 0.87$) were rated higher in reviewer credibility than reviews with high affect intensity ($M = 4.61, SD = 0.82$). This finding is consistent with H3. Of the covariates, only general reviewer credibility was significant ($F(1, 220) = 91.97, p < 0.001$, partial $\eta^2 = 0.30$). No binary or ternary interactions were significant.

The remaining hypotheses were tested via multiple regression analysis (MRA). The first MRA tested the effects of reviewer credibility on perceptions of product quality and the second tested the effects of reviewer credibility on purchase intentions. Three blocks were included in each MRA, the first block examined the effects of involvement and attitude about the brand, the second block added general reviewer credibility, and the third block added experiment reviewer credibility.

The last block of the first MRA explained a significant proportion of variance in perceptions of product quality ($R^2 = 0.12, F(4, 226) = 7.41, p < 0.001$). The results of the individual variables in each block are reported in Table 7. Not surprisingly, attitude about the brand significantly influenced perceptions of quality. In support of

Table 7. Predictors of Perceptions of Product Quality and Purchase Intentions

Block	Variable	Perceptions product quality			Purchase intentions		
		β	R^2	F	β	R^2	F
1	Involvement	0.12 [†]	0.075 ^{***}	9.24 ^{***}	0.17*	0.037*	4.42*
	Brand attitude	0.23 ^{**}			0.08		
2	Involvement	0.13*	0.080	6.60 ^{***}	0.17*	0.043	3.37*
	Brand attitude	0.22 ^{**}			0.07		
3	General reviewer credibility	0.07			0.07		
	Involvement	0.11 [†]	0.116 ^{**}	7.43 ^{***}	0.16*	0.053	3.15*
	Brand attitude	0.20 ^{**}			0.06		
	General reviewer credibility	-0.04			0.01		
	Experiment reviewer credibility	0.22 ^{**}			0.12		

Notes: β = standardized betas. Significance levels for R^2 denote change significance. [†] $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

H4, experiment reviewer credibility also significantly influenced reviewer perceptions of product quality, and its inclusion in block 3 significantly increased the amount of variance explained.

The last block of the second MRA explained a significant proportion of variance in intentions to purchase the product ($R^2 = 0.05$, $F(4, 226) = 3.15$, $p = 0.02$), and the results of individual variables in each block are also reported in Table 7. The influence of experiment reviewer credibility on purchase intentions was not significant. This finding fails to support H5. Rather, most influential on the participants' purchase intentions was level of involvement.

Discussion

WITH EWOM PLAYING A FREQUENT AND PROMINENT ROLE in potential buyers' purchase decisions, potential buyers face the difficult task of separating credible reviews from noncredible reviews. Technology permits myriad reviewers with various levels of experience and trustworthiness to review products and share their opinions online. Using the sparse language cues available in product reviews, potential buyers make attributions of credibility and decide how the anonymous product reviews will be incorporated in their evaluation of the product. Building on the LET, this work argues that potential buyer credibility assessments are influenced via violations of expectations. Experimental findings demonstrate that when expectations are, in fact, violated, the credibility of the reviewer is affected and the perceptions of product are altered.

Unlike past work exploring credibility assessment in mediated interaction (e.g., [21]), we did not detect a consistent, positive effect from lexical complexity in the review. In fact, our results for lexical complexity ran in the opposite direction from our hypotheses, although the difference was not significant. There may be a number of factors that may explain this complicated, equivocal behavior. First, the product reviews are relatively short and may have been insufficient to establish expertise. From examining the actual product reviews coded for this study, many reviews were noted that were extensive, describing in very technical terms the capabilities of products. These product reviews were singled out by the coders as highly credible reviews. However, in this experiment, the reviews were relatively short and only a few words were changed or added to the review. Therefore, the participants may not have had the opportunity to develop a feel for how the reviewer described the capabilities of the product. The two-sided component of the review, however, may have been much more noticeable in a shorter review and much more influential.

Second, technical details of the products are generally provided as part of the product description on the retailer or manufacturer Web site. Because the information is already listed on the Web page, discussion of the technical capabilities of camera (a key part of lexical complexity) in the review might have had a diminished effect. The lexically complex language in the experimental reviews might have been seen as repetition of information already provided elsewhere on the product Web page. This would decrease the likelihood of an expectancy violation, because the lexically complex language would not be unexpected, it would appear simply as repetition. This

may also partly explain why the credibility ratings ran counter to our hypotheses. A violation of expectations may require valuable, technical content that goes beyond what is in the product description or what is commonly known about the product in order to increase reviewer credibility.

Finally, the results could simply indicate that in the context of anonymous online reviews, lexical complexity is not a key criterion by which one judges reviewer credibility. This finding may speak to a preference on the part of participants for simple, easy-to-understand reviews by other consumers.

The effect of two-sidedness was consistent with our hypotheses. Using actual reviews and coding them for two-sidedness, we learned that many reviews are very one-sided. This is consistent with other research stating that most reviews are overwhelmingly positive [15]. We have argued that the prevalence of these types of reviews creates an expectation in the minds of the potential buyers and have shown that when this expectation is violated, the violation produces a positive effect that enhances the credibility of the reviewer. In considering the application of this finding, it should be noted that the amount of negative information was small compared to the amount of positive information in the review. Thus, consistent with past propositions [17], a small amount of negative information in an otherwise positive review appears to positively violate the expectations of reviewers. The balance between positive and negative information can vary widely, and the positive effect of two-sidedness may not hold if there is considerable negative information. The positive effect of two-sidedness hypothesized, and demonstrated as part of this study, likely applies when only small to moderate amounts of negative information are present.

The positive effect of two-sidedness on reviewer credibility creates a seemingly paradoxical relationship when considering the effect of reviewer credibility on perceptions of product quality and purchase intentions. The set of supported hypotheses suggest that reviewers who criticize the products they review in a small way but then end up recommending the product are viewed as more credible and subsequently more influential on potential buyers' perceptions about the product. Thus, by pointing out a product's deficiencies, a reviewer may actually contribute to favorable product perceptions. This counterintuitive insight may be especially important in online reviews where indications of a reviewer's credibility, normally available in other types of interaction, are severely limited.

Also consistent with the hypothesized effects, elevated affect intensity was shown to induce a negative expectancy violation of credibility. As suggested by LET, a narrow bandwidth is allotted to individuals who do not belong to privileged groups. Since technology conceals a reviewer's membership in privileged groups (via anonymity and separation of reviewer from review), an anonymous online reviewer is afforded only a narrow bandwidth. Therefore, reviewers are limited in how much affect they can use in their review and remain credible and persuasive. Our findings support the notion that high affect intensity in product reviews negatively violates expectations, and these violations negatively affect credibility.

The influence of affect intensity demonstrated in this study is likely limited to anonymous online reviews where there is little opportunity for a reviewer to increase his or her bandwidth by revealing membership in privileged groups. Applicable groups

that may influence the bandwidth of the reviewer may include professional organizations, members of reputable media outlets, and those with acknowledged expertise. A verifiable claim to membership in these groups may expand a reviewer's bandwidth and diminish the negative effect of affect intensity. Indeed, online vendors are attempting to create such groups among their reviewers (e.g., Amazon's Top Reviewer and Identity Verified tags). Such membership disclosures will likely influence a reviewer's bandwidth, and therefore may influence the level of affect intensity a reviewer can successfully employ.

The results show that reviewer credibility is more influential on perceptions of product quality than intention to buy. The relationship between reviewer credibility and perceptions of product quality is admittedly small ($R^2 = 0.12$). However, it is consistent with past findings investigating eWOM. While potential buyers have numerous considerations when selecting a product and deciding to purchase it, online product reviews do influence product evaluations [15, 26]. Intent to purchase appeared to be driven more by involvement rather than reviewer credibility, suggesting that perceived importance of owning a product may override the influence of individual online reviews during a purchase decision. Also, involvement might have been especially salient in an experimental setting where participants were not actually purchasing a camera.

This study has extended previous work by demonstrating that the credibility of the reviewer is instrumental to understanding the influence that product reviews have on product evaluations. In other words, total strangers with unknown motives may establish credibility in the text of their review and may influence potential buyers' perceptions about products. Therefore, it is important for potential buyers to realize what may influence their assessment of credibility and the effects their assessments may have. For example, in the absence of reputation or other credibility cues, potential buyers may rely on very little (e.g., two-sidedness) to designate a reviewer as credible. With reviewers positively violating expectations, the danger exists for potential buyers who read such product reviews to attribute a high level of credibility when the attribution is unwarranted.

Thus far, we have said nothing concerning the suitability of using language expectancy violations as a mechanism for credibility assessment. Our intention was purely descriptive when we began exploring assessments of credibility. However, the question of suitability is difficult to ignore. If high-quality credibility cues are tied directly to a reviewer's identity and are difficult to forge [21], then characteristics of language, on their own, utterly fail. Although language characteristics are practically the only basis potential buyers have for evaluating reviewers, language characteristics are easy to alter. If reviewers wish to elevate their influence, they need only decrease the level of affect intensity, moderately increase the level of two-sidedness in their reviews, and reap the benefits of elevated credibility. However, the language characteristics described here are *violations* of expectations. By definition, these language characteristics are infrequent departures from norms, suggesting that reviewers either unknowingly conform to expectations or are unwilling to violate expectations. For example, it is unclear how willing paid reviewers would be to criticize the products they are paid to promote. While language characteristics are easily forged, expected language may be more difficult to alter—making expectancy violations more suitable as a cue to credibility.

It may be unlikely for a reviewer to go against the perceived linguistic norms, fearing the review would not be accepted. Ironically, our findings show that such deviance from the norm results in effective persuasive outcomes. Such findings can be exploited to enrich predictive models of review usefulness and credibility [55, 56].

Limitations and Future Research

THIS WORK IS SUBJECT TO SEVERAL LIMITATIONS of which one must be mindful when considering its application. The work is experimental and did not examine actual purchase decisions. Although the stimulus materials were generated using actual product reviews, the experiment might have appeared artificial to the participants. This work also used students as a population, and although they regularly purchase products online and actively read online product reviews as part of those purchases, their responses may not generalize to other groups and ages.

This work discusses only anonymous product reviewers. It is possible that these findings apply to product reviewers who are not completely anonymous, but about whom potential buyers know very little. Additional research may shed light on the boundaries of these findings and the point at which an established reputation begins to confer a wider bandwidth and the benefits that come with a wider bandwidth. According to LET, reviewers who have acknowledged reputations and are known to potential readers may have a much wider bandwidth, potentially reducing expectancy violations. However, this conjecture requires empirical support.

Furthermore, this work deals with only a single type of product—a digital camera. Although the effects in this experiment may generalize to other types of consumer electronics, the findings presented here should be replicated with other types of products and services. The types of products and services reviewed online are vast and varied. Product type (e.g., experience versus search good) likely contributes to expectations that potential buyers have about their reviewers. Moreover, the relationship between language features and reviewer credibility may change depending on the type of product. For example, the lexical complexity may be relevant for products more technical than consumer electronics or affect intensity may not cause an expectancy violation for products such as toys or clothing. Additional work exploring possible interactions between the type of product and language characteristics is warranted.

Finally this work limited its scope to effects of positive reviews. Past research has uncovered a significant effect from negative reviews on sales figures [15], however, this effect may operate via a different mechanism than positive reviews [29, 30], and it deserves future attention. In addition, the amount and valence of other reviews [20] and the speed with which people make credibility attributions may also merits additional attention [49].

Conclusion

PRODUCT REVIEWS INFLUENCE PERCEPTIONS ABOUT PRODUCTS, yet this influence is subject to the amount of credibility a potential buyer attributes to the reviewer. With numerous

anonymous product reviews available that can potentially influence purchase decisions, it is critical to understand how credibility attributions are made when little information about the source is available. We have extended LET to an online, asynchronous setting to form hypotheses about how characteristics of the text of product reviews can influence credibility assessments. We have shown that it is by expectancy violations that reviewers' attributions of credibility are made, and these credibility attributions have a significant effect on perceptions of product quality.

With online retailers seeking to establish online communities and followings, and with manufactures and marketers increasingly desirous to influence the online reputation of their products, the implications of these findings will likely grow. We recognize that unscrupulous marketers may try to leverage this work and generate more credible product reviews. However, we feel that the dramatic effect of simple word choices in anonymous online product reviews must be brought to light so that potential customers might understand how they make credibility attributions when reading anonymous product reviews. As we stated above, it is unknown how suitable expectancy violations are as an indication of credibility. However, it is likely that potential buyers may desire a firmer basis for making credibility attributions. Providing such a basis may constitute a valuable service that aggregators of online product reviews may consider supplying.

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NOTES

1. The differences between eWOM and WOM outlined by Dellarocas [18] do not apply to all eWOM. For example, some online review aggregators do not permit anonymous reviews or may highlight reviews from acknowledged and independent experts. However, we limit our attention to eWOM, which demonstrates the differences described by Dellarocas and focus on the common purchase environment where popular online vendors display anonymous product reviews alongside product information.

2. The term *bandwidth* originated with the authors of LET [7, 8], and although it is has a different meaning for an MIS audience, the term was retained for the sake of consistency with our theoretical foundation.

3. It is important to note that where reviewers are recognizable and have developed a reputation that warrants greater credibility, LET in the traditional sense may still apply, and these individuals may still be afforded greater latitude in their attempts to persuade and influence others. However, this context is separate from our context.

4. Autobiographical information may play a much larger role if it is verifiable or established by reputation. However, our context is confined to anonymous reviews where supplied autobiographical information is neither established nor verified. This anonymous context matches the large number of reviews that are posted on online vendors' Web sites, which potential buyers view prior to purchase.

5. Pilot participants responded to the following questions during the second pilot experiment: lexical complexity: "The review contains complex and technical language"; two-sidedness: "The review contains both positive and negative aspects about the camera"; affect intensity: "The review contains many emotional words." All of the items were on a 1–7 scale with "strongly disagree" and "strongly agree" as the endpoints.

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Appendix

THE SAME INSTRUCTIONS WERE GIVEN TO BOTH THE CODERS and the pilot 1 participants and consisted of definitions for lexical complexity, semantic complexity, and affect intensity. The definitions shown to the coders and the pilot 1 participants are shown in Table A1. After reading the definitions, the pilot participants and coders then rated the reviews. They were free to refer back to the characteristic definitions at any time. The coders and the pilot 1 participants rated whether the reviews they viewed demonstrated high lexical complexity, high two-sidedness, or high affect intensity using a seven-point scale anchored by “strongly agree” and “strongly disagree.”

The survey items that were used in this study all came from scales validated in previous research. The items are listed here along with the source from which they came. All the items except for involvement are seven-point scales anchored by “strongly agree” and “strongly disagree.” The involvement items are also captured on a seven-point scale and the anchors are listed in parentheses following each item. The correlations between all the key variables are shown in Table A2.

Table A1. Characteristic Definitions Provided to Coders and Pilot Participants

Characteristic	Definition
Lexical complexity	Many long words and sentences, technical jargon, professional terms, many clauses in the sentences, little repetition in words.
Two-sidedness	The message is two-sided, both pros and cons are listed, there are conflicting ideas/concepts in the review.
Affect intensity	Many emotional words (e.g., like, love, hate, despise). Emotional words describe how a person feels about something. If many feelings are described, the review should be high in affect.

Table A2. The Correlation Table Between the Key Variables

	Experiment reviewer credibility	General reviewer credibility	Involvement	Brand attitudes	Perception of quality
General reviewer credibility	0.52***				
Involvement	0.06	-0.08			
Brand attitudes	0.15*	0.10	0.15*		
Perception of quality	0.24***	0.08	0.16*	0.25***	
Purchase intentions	0.14*	0.07	0.18**	0.10	0.31**

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

General Credibility (Adapted from [25])

Generally, product reviewers are likely to be trustworthy.

Generally, product reviewers are likely to be believable.

Generally, product reviewers are likely to be accurate.

Generally, product reviewers are likely to be credible.

Brand Attitudes (Generalized Attitude Measure Adapted from [11], Product Quality Adapted from [48])

I find Nikon digital cameras to be favorable.

I find Nikon digital cameras to be positive.

I find Nikon digital cameras to be of high quality.

I find Nikon digital cameras to be durable.

I find the workmanship of Nikon digital cameras to be high.

Involvement (Adapted from [40])

How important to you is the subject of owning a digital camera? (Not at all important, Very important)

How relevant to you is the subject of owning a digital camera? (Not at all relevant, Very relevant)

Do you consider the subject of owning a digital camera to be consequential? (Not at all consequential, Very consequential)

Do you consider owning a digital camera to be personally significant? (Not at all significant, Very significant)

Do you find the thought of owning a digital camera to be pleasurable? (Not at all pleasurable, Very pleasurable)

Do you consider owning a digital camera to be pleasant? (Not at all pleasant, Very pleasant)

Do you think of owning a digital camera as satisfying? (Not at all satisfying, Very satisfying)

Experiment Reviewer Credibility (Adapted from [25])

This reviewer is likely to be trustworthy.

This reviewer is likely to be believable.

This reviewer is likely to be accurate.

This reviewer is likely to be credible.

Camera Quality (Adapted from [48])

This camera is high in quality.

The workmanship of this camera is high.

This camera is durable.

Purchase Intentions (Adapted from [43])

For my next camera purchase, I plan to buy this camera.

For my next camera, I intend to purchase this camera.

A factor analysis was also performed on the items for each of the key variables. This was done using principle components analysis with a varimax rotation and extracting six factors (the number of factors in examined in this study). The factor solution accounted for 72.61 percent of the variance rotated component matrix and is shown in Table A3. All the items used in the experiment loaded according to expectations, without significant cross loading.

Table A.3. Rotated Factor Solution for Survey Items Used in this Study

Survey items	Component					
	1	2	3	4	5	6
<i>Involv_Import</i>	0.888	0.053	-0.039	0.007	0.085	0.002
<i>Involv_Relev</i>	0.851	0.024	-0.007	0.045	0.128	0.034
<i>Involv_Sig</i>	0.848	0.055	-0.045	0.024	0.097	0.053
<i>Involv_Satis</i>	0.836	0.037	0.114	-0.117	0.075	0.057
<i>Involv_Pleasure</i>	0.822	0.080	0.108	-0.115	-0.032	0.055
<i>Involv_Pleasant</i>	0.813	0.095	0.128	-0.131	-0.017	0.030
<i>Involv_Conseq</i>	0.643	0.070	-0.089	0.059	-0.032	0.076
<i>Nikon_HighQual</i>	0.076	0.894	0.069	-0.017	0.023	0.014
<i>Nikon_Pos</i>	0.093	0.884	0.069	0.059	0.081	0.081
<i>Nikon_Fav</i>	0.065	0.882	0.018	-0.006	0.078	0.072
<i>Nikon_Workmanship</i>	-0.011	0.852	0.021	0.058	0.169	-0.075
<i>Nikon_Durable</i>	0.151	0.820	0.053	0.073	0.060	0.018
<i>RevCred_Believe</i>	0.012	0.063	0.827	0.192	0.162	-0.016
<i>RevCred_Trustworthy</i>	0.026	0.148	0.772	0.235	0.059	-0.039
<i>RevCred_Accur</i>	0.055	0.017	0.736	0.178	0.071	0.175
<i>RevCred_Credible</i>	0.048	-0.019	0.690	0.390	0.023	0.083
<i>GenCred_Accurate</i>	0.036	0.036	0.103	0.818	0.001	0.078
<i>GenCred_Credible</i>	-0.076	0.003	0.213	0.811	-0.019	-0.059
<i>GenCred_Trustworthy</i>	-0.091	0.089	0.304	0.737	0.099	-0.018
<i>GenCred_Believe</i>	-0.082	0.044	0.387	0.713	-0.024	0.037
<i>CamQual_Work</i>	-0.008	0.114	0.261	-0.081	0.837	0.053
<i>CamQual_Quality</i>	0.149	0.060	0.170	-0.007	0.816	0.107
<i>CamQual_Durable</i>	0.077	0.200	-0.117	0.130	0.669	0.150
<i>CamPurch_Buy</i>	0.110	0.050	0.056	0.051	0.139	0.960
<i>CamPurch_Purch</i>	0.128	0.040	0.111	-0.014	0.161	0.947

Note: Boldface values represent the loadings for each factor.

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