The Recent versus out-dated: An Experimental Examination of the Time- Variant Effects of Online Consumer Reviews

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Abstract

Conventional wisdom suggests that the most recent online reviews may have a greater impact than remote-past online reviews on consumers’ purchase decisions because of their up-to-date nature. However, building on the theory of temporal distance and construal fit, this study proposes a new perspective, suggesting that the influence of online reviews posted at different times is a function of the timeframe for the consumers’ intended purchase. Four experiments demonstrate that although recent online reviews are more influential in shifting consumer preferences towards near-future consumption decisions, the relative influence of remote-past online reviews in shifting consumer preferences increases when consumers are making distant-future consumption decisions. This effect occurs because of a construal fit between the construal level of the online reviews posted at different times and that of the timeframe of consumers’ purchase decisions. The recent reviews are represented at a relatively lower construal level, with the low-level construal matching the timeframe of the near-future consumption decision. Remote-past reviews, however, are represented at a relatively higher construal level and match the timeframe of the distant-future consumption decision. This construal fit, in turn, enhances consumer engagement and consequently exerts a greater influence on consumer preferences.

Keywords: Online consumer reviews; Temporal distance; Construal level; Construal fit; Consumer engagement

Introduction

Online product reviews have become an indispensable tool for consumers and therefore for online retailers who want to attract and retain consumers (Grewal and Levy 2007; Khare, Labrecque, and Asare 2011; Pan and Zhang 2011). The product reviewing system can be used strategically to influence consumers’ purchase decisions (Sen and Lerman 2007), to enhance their shopping experience (Srinivasan, Anderson, and Ponnavolu 2002), and to increase firm profitability (Chen, Wang, and Xie 2011; Godes and Mayzlin 2009). Online retailers cannot afford to turn a blind eye to the benefits of product reviews, and it is therefore of paramount importance to understand the factors that determine how consumers respond to product reviews.

Although the literature has traditionally emphasized the importance of the volume and valance of reviews in shaping consumer judgment (e.g., Chevalier and Mayzlin 2006; Dhar and Chang 2009; Liu 2006), relatively little research has explored the other factors that make online product reviews helpful in the eyes of consumers (Pan and Zhang 2011). For example, the digitization of online reviews has made it possible to record the time a particular review was created and posted. However, little is known about how consumers’ product evaluations may be influenced by the various posting times of numerous online reviews. Imagine a consumer who is booking a hotel room online and is presented with a number of consumer reviews sorted by date. When both the recent and the out-dated reviews are readily available, which reviews would be more influential for the consumer when making his or her purchase decision? We address this issue in the current research.

Although conventional wisdom suggests that people tend to believe that the most recent reviews are more informative because of the up-to-date nature of the review message, we propose a new perspective that distinguishes between consumer purchases for immediate consumption (e.g., booking a hotel room for a trip in two days) and those for distant consumption (e.g., booking a hotel room for a trip in six months). We suggest that the out-dated reviews may not necessarily underperform compared to the most recent alternatives when consumers are
making decisions for distant-future consumptions. Although in most situations, people shop online for relatively immediate consumptions, there are many other situations where the consumers’ purchases are not intended for immediate consumption. For example, technological developments such as electronic tickets and online payments have made advanced selling possible for numerous industries, including airline, travel, and hospitality service (Shugan and Xie 2000). When people engage in advanced purchases, how do the online reviews that are posted at different points in time influence the consumer’s decisions? Furthermore, when the available online reviews provide opposing consumption experiences (e.g., the recent reviews share positive experiences, whereas the out-past reviews provide negative feedback, or vice versa), how does this competing information influence the consumer’s immediate consumption versus distant-future consumption decisions?

This research aims to address these issues by examining how the posting time of the online reviews interacts with the purchase timeframe in influencing consumer purchase decisions. Based on the psychological distance and construal level theory (Trope, Liberman, and Wakslak 2007) and research on construal fit (Higgins 2000; Lee and Aaker 2004; Zhao and Xie 2011), we propose that the influence of online reviews posted at different points in time (i.e., recent vs. remote-past) is a function of the timeframe of the intended purchase. More specifically, when consumers focus on near-future consumption, they tend to operate at a lower level of construal mindset (Trope, Liberman, and Wakslak 2007). Therefore, a construal fit should occur when external stimuli emphasizes more concrete, lower level information when consumers are concerned with near-future consumption (Lee and Aaker 2004). In contrast, consumers tend to operate at a higher level of construal mindset when they focus on distant-future consumptions. Thus, a fit should occur when external stimuli emphasizes more abstract, higher level information if consumers are concerned with distant-future consumption. We posit that recent reviews tend to be construed at lower levels and are, therefore, a fit for near-future consumption decisions for which consumers are operating at a lower construal mindset. Conversely, the out-dated reviews tend to be construed more abstractly and thus are a fit for distant-future consumption decisions where consumers are operating at a higher construal mindset. This construal fit, in turn, enhances consumer engagement with the reviews and consequently exerts more influence over consumer decisions.

Four studies test this basic hypothesis. Study 1 demonstrates that, all else being equal, recent online reviews are represented at a relatively lower construal level, whereas remote-past online reviews are represented at a relatively higher construal level. Study 2 finds that the relative impact of remote-past reviews in influencing consumers’ decisions increases when consumers are making distant-future purchases. Study 3 examines how the effectiveness of online review is influenced by the construal fit between the two temporal distances by making both the recent and the out-dated consumer reviews available. Study 4 considers the valence of online reviews and further investigates how positive/negative online reviews posted at different points in time influences consumers’ product evaluations for near-future versus distant-future purchases. In the next section, we review the literature that leads to our research hypotheses and present empirical studies before discussing the implications for online retailers.

### Theoretical Framework

#### Effects of Online Reviews

Word-of-mouth (WOM) communication is an important facilitator of learning and can significantly impact consumer decisions (e.g., Feick and Price 1987; Leonard-Barton 1985). A long stream of research has documented the effects of WOM on consumers’ product evaluations and adoptions (Mahajan, Muller, and Wind 2000; Van den Bulte and Wuyts 2007). With the advent of e-commerce and online shopping, researchers have begun investigating the issues related to the attributes of online consumer reviews and their influence on consumer perceived helpfulness (Pan and Zhang 2011), consumer choice (Zhao and Xie 2011) and product sales (Duan, Gu, and Whinston 2008; Godes and Mayzlin 2004). These researchers have demonstrated that online consumer reviews increase sales in a number of contexts (Chevalier and Mayzlin 2006; Liu 2006; Moe and Trusov 2011). Consequently, online retailers are keen to understand which dimensions of online consumer reviews are the most important factors influencing consumer decisions and how firms can strategically manage these key dimensions to drive business.

Recent studies of online consumer reviews have focused on two major dimensions of these reviews: volume (the total number of reviews) and valence (the review ratings). For instance, Dhar and Chang (2009) found that the future sales of a music album are positively correlated with the volume of blog posts about that album. Chevalier and Mayzlin (2006) further indicate that improvements in the volume and valence of a book’s reviews both lead to an increase in sales. However, with a similar data set from Amazon.com, Chen, Wang, and Xie (2011) found that WOM valence is not related to sales. In a similar vein, Liu (2006) and Duan, Gu, and Whinston (2008) suggest that the volume of reviews matters but the valence does not. Given these inconsistent research findings, some researchers suggest that the effect of WOM valence may depend on specific conditions, such as the risk perceived by the consumers and the presentation of WOM (e.g., vividness) (Herr, Kardes, and Kim 1991).

As a digitized type of WOM, online consumer reviews possess a unique time feature that has seldom been addressed in the literature. Compared with traditional offline WOM, the exact posting date of each online review is recorded and readily available to readers. However, little empirical work has explored how the time dimension of online reviews impacts consumer decisions. In particular, by holding the other dimensions (contents, valence, and volume) of the online reviews constant, how would the additional information of posting time change the impact of the online reviews? The present study investigates this question.
Recent versus Remote-Past Online Reviews and Construal Level

Although many online retailers (e.g., Amazon.com), under the assumption that remote-past product reviews are less useful in influencing consumers’ decisions, present reviews according to how recent they are, the exact nature of the relationship between a review’s posting time and its influence on consumer decision is unclear. For instance, Wu and Huberman (2007) found that memory and novelty tend to decay over time, and thus what was heard about a new movie from someone two weeks ago should be less likely to impact one’s behavior today than what was heard about it today. A recent study by Pan and Zhang (2011), however, finds that the age of a review (i.e., the time elapsed since the date on which a review was posted) has a positive correlation with the perceived helpfulness of a product review, which suggests that consumers may consider remote-past reviews more helpful than averagely expected.

These inconsistent findings suggest that any simple answers regarding the effectiveness of recent versus remote-past reviews in influencing consumer decisions may be overgeneralizations and that a closer look at this issue is required. In the traditional WOM paradigm, a message recipient must rely on their memory to recall message contents from an earlier period, which can lead to issues like message decay. Online reviews, however, do not rely on recipient recall as the information is ever present and online shoppers can easily access various product reviews posted by other consumers at different times. For example, one could learn how other consumers who visited a hotel recently (e.g., two days ago) evaluated the hotel or could simply click the “page down” button to check for information about the hotel from those who stayed there several months earlier. In addition, online shoppers, compared to their offline counterparts, can easily search specific remote-past product reviews. Combined, both the out-dated and the recent online reviews are processed almost simultaneously, giving memory and novelty little time to decay. Consequently, compared with traditional WOM, the relative influence of remote-past online reviews in influencing consumer preferences may become stronger in the context of online shopping.

Among research regarding the relationship between time and consumer decisions, construal level theory (CLT; see Trope, Liberman, and Wakslak 2007 for a review) suggests that time may increase the value of a remote event for the consumer depending on the construal mindset of the individual. According to CLT, temporal distance influences the individual’s responses to future events by systematically changing the way he or she construes those events. Individuals construct different representations of the same information depending on whether the information pertains to the near or the distant future (Liberman and Trope 1998; Trope and Liberman 2000). When processing information about distant-future events, individuals use more abstract mental models; the representations are more decontextualized and superordinate, and the construals are higher. However, when processing information about near-future events, the mental model becomes more concrete and includes subordinate, contextual, and incidental features (Trope and Liberman 2003).

Although the primary focus of CLT is on the psychological consequences of temporal distance from future events, the same general principles hold for other distance dimensions, including temporal distance from past events and social distance (Trope and Liberman 2003). Regarding the effect of past temporal perspective, CLT suggests that a distant-past distance is associated with higher construal levels and that people presumably form higher-level construals of information about events in the more remote-past. For example, Semin and Smith (1999) asked participants to recall significant events from either the distant past (at least a year ago) or the recent past (the last 2 weeks ago) and analyzed the level of abstractness in the responses. The authors found that the descriptions of the more distant events used more abstract language, which suggests that moving events back in time fosters more abstract construals. Similarly, Frank and Gilovich (1989) found that distant past behaviors tend to be explained in dispositional terms when compared with recent-past behaviors. These studies suggest that increasing past temporal distance is associated not only with a loss of specific details but also with an increased use of high-level, schematic construals (Trope and Liberman 2003). Based on CLT, we expect that the time elapsed since the date on which a review was posted would change the way consumers construe those reviews and propose the following hypothesis.

Hypothesis 1. All else being equal, a recent online review is construed at a relatively lower construal level, whereas a remote-past online review is construed at a relatively higher construal level.

Construal Fit of Online Reviews and Purchase Timeframe

The general principles of CLT suggest that, compared to processing information about near-future events, when processing information about distant-future events, individuals use more abstract mental models or higher-level construals (Trope and Liberman 2003). Based on these principles, numerous studies have demonstrated that temporal distance influences consumer judgments and decision-making. For instance, researchers have found that temporal distance affects the attractiveness of an option by increasing the value associated with the higher-level construals of the option and decreasing the value of the lower-level construals of the option (Trope, Liberman, and Wakslak 2007).

More importantly, construal fit hypothesis claims that an external stimulus exerts the greatest influence when it fits the consumers’ mindsets (Higgins 2000; Lee and Aaker 2004). For instance, promotional messages are more persuasive when their frames fit the consumer’s regulatory focus (Lee and Aaker 2004) and when the type of message (comparative vs. non-comparative) matches the consumer’s mental representation of information processing (analytical versus imagery-based; Thompson and Hamilton 2006). Similarly, Thomas, Chandran, and Trope (2006) found that central information about a product, such as a feature upgrade, implies a high-level value of
the product (thus a high-level construal), whereas the peripheral information, such as a discount, indicates a low-level value of the product (thus a low-level construal). Thus, the central product information is viewed as more important and has a stronger influence on the consumer’s distant-future purchase intentions, whereas peripheral information is more relevant in influencing purchase intentions in the near future due to the fit between the product information and the consumer’s mindset.

Recent findings in the context of consumer recommendations offer direct evidence for the construal-fit effect. Specifically, recommendations from socially close others are found to be more influential in shifting near-future preferences, whereas recommendations from distant others are more influential in shifting distant-future preferences because the recommendations are perceived to be more relevant when there is a construal fit between the social and the temporal distances (Zhao and Xie 2011). Similarly, research on persuasion also demonstrates that the persuasive impact of messages can be maximized when their framing matches where the consumers are in their decision-making process. For instance, Nenkov (2012) found that consumers who are in a pre- (post-) decisional phase of decision-making are more likely to be persuaded by messages framed using psychologically distant (close) orientation. In addition, Jin and He (2013) found that the attractiveness and perceived usefulness of a service guarantee is also a function of the consumers’ decision framework such that full-satisfaction guarantees more strongly influence distant-future decisions, whereas attribute-specific guarantees are more influential in near-future consumption decisions. These studies jointly suggest that people perceive an external stimulus to be more useful in their decision-making when they experience a construal fit, and the effectiveness of persuasive messages depends on whether their construal levels match the timeframe of the consumer’s purchase decisions.

Regarding the reasons underlying these demonstrated effects of construal fit on persuasive power, Avent and Higgins (2006) suggest that experiencing a construal fit increases the individual’s engagement in what he or she is doing and that this experience of engagement creates a motivational force that absorbs and engrosses people. The state of being engaged is to be involved, occupied, and interested in something, and strong engagement is to concentrate on something, to be absorbed or engrossed with it (Higgins 2006; Lee and Higgins 2009). Previous research has provided a great deal of evidence that construal fit is an important source of engagement strength. For example, Higgins and his coauthors (Higgins et al. 2003; see also Camacho, Higgins, and Luger 2003) suggest that increased engagement arising from a fit is characterized by a sense of feeling right, which in turn affects product judgments (Malaviya and Sternthal 2009). Förster, Higgins, and Idson (1998) found that the strength of engagement was stronger when there was regulatory fit (i.e., promotion/eager; prevention/vigilant) than when there was no fit (i.e., promotion/vigilant; prevention/eager). Similarly, Cesario, Grant, and Higgins (2004) demonstrates that experiencing a construal fit can increase the attractiveness of a positive-value target because a fit increases the strength of engagement, which in turn increases the intensity of the value experience of a target.

In the context of a persuasive message, engagement is thought to intensify the processing of the message and thus positive reactions to it (Lee, Keller, and Sternthal 2010). As a result, people are more likely to consider and rely on persuasive messages that are consistent with their mental representation state. For instance, Keller (2006) found that those primed with a prevention focus are more persuaded when the message for a sunscreen emphasizes its effectiveness (a vigilance means) rather than its ease of use (an eagerness strategy), whereas the reverse occurs for those who are primed with a promotion focus. Lee, Keller, and Sternthal (2010) demonstrate that when there is a fit between the individual’s regulatory orientation and the level at which the message is construed, the evaluation of the message advocacy is more favorable than when such correspondence is absent. Specifically, prevention-focused participants had more positive brand attitudes when the product was described at a low (e.g., by emphasizing “how” the product can be purchased) rather than a high level of construal (e.g., by emphasizing “why” the product should be purchased). In contrast, promotion-focused participants had more favorable brand attitudes when the product was described at a high versus low level of construal. This result is because people become more engaged when the construal level of the message matches their regulatory focus, and this engagement, in turn, intensifies reactions toward the message.

We suggested in Hypothesis 1 that a remote-past review, which describes an experience that is temporally far from the present, is represented at a relatively higher construal level. A recent online review uses a purchase experience that is temporally near the present; therefore, it is represented at a relatively lower construal level. As a type of persuasive message, these remote-past and recent online reviews work as external stimuli for people who are evaluating an intend-to-buy product. According to the construal-fit hypothesis, when consumers are concerned with near-future consumption, a construal fit should occur when external stimuli emphasizes more concrete, lower level information. A recent online review is represented at a relatively lower construal level, and thus consumers will experience a construal fit with these recent reviews and become more engaged, which in turn intensifies reactions. As a result, consumers will perceive the recent online reviews as more influential for their purchase decisions. In contrast, when consumers are concerned with distant-future consumption, a construal fit should occur when external stimuli emphasizes more abstract, higher level information. Thus, consumers will experience a construal fit with remote-past reviews and become more engaged when their purchase decisions are for distant-future consumption. Taken together, we propose the following hypotheses.

Hypothesis 2. All else being equal, the relative influence of recent online reviews in influencing consumer decisions increases when consumers make near-future purchases, whereas the relative influence of remote-past reviews increases when consumers make distant-future purchases.

Hypothesis 3. The effect of construal fit between purchase timeframes and the posting time of reviews on the influence of
online reviews (H2) is mediated by the experience of engagement.

**Study 1: Construal Level of Recent versus Remote-Past Reviews**

In this study, we tested Hypothesis 1, which states that recent online reviews are construed at a relatively lower level, whereas remote-past online reviews are construed at a relatively higher level. We presented a few online reviews to our participants and then asked them to rephrase these reviews to understand how they construe recent versus remote-past reviews differently. According to CLT, people tend to use more abstract words to describe events in the more remote-past and use more concrete words for more recent events (Semin and Smith 1999; Trope and Liberman 2003). Thus, if Hypothesis 1 is true, it is anticipated that participants will employ more abstract words for rephrasing remote-past reviews and use more concrete words for recent reviews. Moreover, the CLT literature suggests that temporally distant events are construed in higher-level, more abstract, simpler terms. Consequently, objects will be categorized into broader categories when they pertain to temporally distant situations than to temporally close situations (Liberman, Sagristano, and Trope 2002). We thus asked all participants to conduct a categorization task to further examine whether participants will formulate less (more) categories for remote-past (recent) reviews.

In addition, a search product (e.g., hard disk or printer) and an experience product (e.g., wine or restaurant) may differ in various aspects (Patrick and Park 2006), and the extent to which consumers rely on the online reviews to make decisions may depend on the product type (Pan and Zhang 2011). For example, consumers feel they need to search more second-hand information for search products than experience products in order to evaluate product quality (Weathers, Sharma, and Wood 2007). We were also curious whether the different product type may influence how people construe the recent versus the out-dated reviews and thus included product type as a factor in study 1.

In our research, we investigate online reviews posted at different times. From a product adoption perspective, it is possible that older reviews were posted by early-adopters of the product or high need-for-uniqueness consumers (Cheema and Kaikati 2010), whereas the relatively newer reviews were shared by later-adopters of the product. Thus, it is likely that consumers perceive the posters and the contents of older product reviews released by these early-adopters as more unique. To examine whether such a possibility may sway how people construe recent versus remote-past reviews, we measured the perceived uniqueness of reviews and posters and included these variables as a covariate in our analysis.

**Method**

A total of 212 students (105 females) at a major public university completed this study online for monetary compensation. The study was a 2 (posting date of online reviews: two days ago vs. six months ago) × 2 (product type: experience vs. search) between-subjects design. Participants were randomly assigned into four groups.

The cover story informed the participants that the research is about how people use online consumer reviews. Participants in the experience-product conditions were asked to imagine that they were going to have dinner and needed to find an appropriate wine for this dinner. Participants were then presented with a webpage for a bottle of wine that provided detailed product information, including wine type, color, and production year and area, together with ten online consumer reviews. To increase the reality of the experiment, all the reviews were extracted from a real retailing website that sells wine online. Participants read the same ten reviews in the wine-condition, except that for half of these participants, the reviews were noted as two days old (the recent condition), while a date label of six months old (the outdated condition) was used for the other half of the participants (see Appendix A).

In a similar vein, participants in the search product-conditions were asked to imagine that they were going to buy a portable hard disk online and were then presented with a webpage for a hard disk that provided detailed product information and ten online consumer reviews (see also Appendix A). All of the reviews were extracted from a real retailing website that sells hard disk online, and the contents differ from the reviews of wine. Again, the posting dates of the reviews were varied either as two days old or six months old, and participants were randomly assigned to one of these two conditions.

Next, participants were asked to read the reviews carefully and then to describe these reviews in their own words. After this re-description task, participants were also asked to classify the given ten reviews into mutually exclusive and collectively exhaustive groups, using as many groups as they deemed appropriate. Finally, participants answered a few questions, including the perceived uniqueness of review posters (“To what extent do you think those who posted the reviews are a unique person? 1 = not at all, 7 = very unique”), perceived uniqueness of review contents (“To what extent do you think the review contents are unique? 1 = not at all, 7 = very unique”), and questions for manipulation checks (e.g., “To what extent do you think the product is a search or an experience product? 1 = search, 7 = experience”; “Were the reviews posted recently or at an older time? 1 = recent, 2 = old”).

**Results and Discussion**

**Manipulation check.** An ANOVA on search versus experience product rating yielded a significant main effect of product type, $F(1, 208) = 253.56, p < .001$, and no other significant effects ($p > .50$), suggesting that participants rated the hard disk more as a search product ($M = 2.79$) and the wine more as an experience product ($M = 5.17$). Thus, our manipulation for product type was valid. In addition, we tested whether participants generated different numbers of words as a function of the various posting dates and for different product type in the rephrasing task. Our results show that the amount of words participants used in re-describing the reviews did not differ significantly for reviews that were labeled as two days old ($M = 38.49$ words).
and six months old ($M = 40.46 \text{ words}$), $t (210) = 0.57$, NS. The difference was also not significant between the hard disk conditions ($M = 36.94 \text{ words}$) and the wine condition ($M = 42.12 \text{ words}$), $t (210) = 1.51$, NS. In addition, the ANOVAs on the perceived uniqueness of review posters ($F s < .03$, $p > .86$) and on the perceived uniqueness of review contents did not reveal any significant effects ($F s < 2.16$, $p > .14$), suggesting that the perceived uniqueness does not vary across the four experimental conditions and thus bears no prominent effect to our subsequent analysis. At the end of the experiment, we asked participants to indicate the posting date of the reviews they have read. The results showed that all participants were able to correctly recall the time of reviews posted at the end of experiment, thus suggesting that they paid enough attention to the posting dates of the reviews.

Abstractness of the reviews rephrased. To evaluate the abstractness of the reviews rephrased (for simplicity, we coined this measure as “abstractness score”) by our participants, we recruited three independent judges who were unaware of the study hypotheses to rate whether the product description was abstract (i.e., worth buying; easy to use) or concrete (i.e., the color is nice; the size is a little big) on a 7-point scale ($1 = \text{very concrete}$, $7 = \text{very abstract}$). Each judge read and evaluated the descriptions independently, and thus we obtained three sets of ratings. Because the ratings were reliable ($a = .84$), we then averaged the three ratings into one index and used it as a proxy for abstractness score in our later analysis. An ANOVA on the abstractness score yielded a significant main effect of posting dates, $F (1, 208) = 13.505$, $p < .001$, and no other significant effects ($p > .20$). Specifically, participants described the recent online review in a relatively more concrete way ($M = 3.47$) and the out-dated online review in a relatively more abstract way ($M = 4.19$), regardless of whether the product was a hard disk ($M_{\text{recent}} = 3.63$ vs. $M_{\text{remote-past}} = 4.28$, $t (106) = 2.42$, $p < .05$) or a bottle of wine ($M_{\text{recent}} = 3.31$ vs. $M_{\text{remote-past}} = 4.09$, $t (102) = 2.68$, $p < .01$). These results suggest that, from the participants’ perspectives, the recent online reviews were construed at a relatively lower level and the out-dated reviews were construed at a relatively higher level (see Table 1), thus lending support to Hypothesis 1.

Category breadth of reviews. In the categorization task, participants were also asked to classify the given ten reviews into mutually exclusive and collectively exhaustive groups, using as many groups as they deemed appropriate. For each condition, we counted the total number of groups into which participants classified the reviews. An ANOVA on the number of categories yielded a significant main effect of posting dates, $F (1, 208) = 12.47$, $p < .001$, and no other significant effects ($p > .23$). Specifically, participants classified into fewer categories for the out-dated reviews ($M = 3.05$ groups) than for the recent reviews ($M = 3.53$ groups). This pattern held true regardless whether the product was the hard disk ($M_{\text{remote-past}} = 3.17$ vs. $M_{\text{recent}} = 3.57$, $t (106) = 2.22$, $p < .05$) or the bottle of wine ($M_{\text{remote-past}} = 2.93$ vs. $M_{\text{recent}} = 3.49$, $t (102) = 2.75$, $p < .01$) (see also Table 1).

Taken together, the above findings support the Hypothesis 1 that recent online reviews are construed at a relatively lower conceptual level, whereas remote-past online reviews are construed at a relatively higher conceptual level. In study 1, we controlled both the product type and the content of online reviews. Thus, our results demonstrated that rather than something specific about the product type or the nature of review contents, or consumers’ perceptions toward the review posters, it was indeed the temporal distance of reviews that influenced consumers’ relative conceptual level when processing the online reviews. This finding provides a solid base to further test our research ideas regarding the interaction between consumers’ purchase decisions for near-future or distant-future consumption and the various posting dates of online reviews.

### Table 1: Results of study 1

<table>
<thead>
<tr>
<th>Experience product (wine)</th>
<th>Search product (hard disk)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Abstractness score of the reviews</strong></td>
<td><strong>Category breadth of reviews</strong></td>
</tr>
<tr>
<td>Recent Reviews</td>
<td>Out-dated Reviews</td>
</tr>
<tr>
<td>3.31 (1.36)</td>
<td>4.09 (1.60)</td>
</tr>
<tr>
<td>3.49 (1.27)</td>
<td>2.93 (0.78)</td>
</tr>
</tbody>
</table>

*Notes: (1) Within the recent reviews and Out-dated reviews conditions, means in the same row with different subscripts are significantly different at $p < .05$. (2) Standard deviations are in parentheses.*

### Study 2: Differential Influences of Recent versus Remote-Past Reviews

In study 2, we tested Hypothesis 2, which states that the relative influence of recent online reviews in influencing consumer decisions increases when consumers make purchase decisions for near-future consumption, whereas the relative influence of remote-past reviews increases when the decision is for distant-future consumption. In addition, we examined the underlying process (Hypothesis 3) that consumers become more engaged when they experience a construal fit between the review’s posting time and purchase timeframe, which leads to greater perceived influence of online reviews.

Study 1 investigated product type, and the result suggested that participants construe recent versus remote-past reviews differently regardless of product type. However, to better understand whether the proposed interaction between the posting dates of online reviews and the consumption timeframe of a purchase decision is also independent of product type, we included product type as one factor in study 2. Specifically, we varied whether the participants would face a consumption decision for a hotel (experience product) or a printer (search product) in the near future (i.e., a purchase for tomorrow) or in the distant future (i.e., a purchase for six months into the future), and presented different online reviews for participants.
to reference. Again, we extracted real consumer reviews from online retailers and presented the same set of online reviews for participants in hotel/printer conditions, respectively. Similar to study 1, we manipulated the review date as either two days old (recent) or six months old (remote-past). We then assessed the engagement experience and the perceived influence of the online reviews.

Method

A total of 218 MBA students (110 females) at a major public university completed this study for course credits. The study was a 2 (consumption timeframe: near vs. distant) \(\times\) 2 (posting date of online reviews: two days ago vs. six months ago) \(\times\) 2 (product type: experience vs. search) between-subjects design.

Participants in the experience-product conditions were asked to imagine that they were going on a trip either in two days (i.e., a near-future consumption decision) or in six months (i.e., a distant-future consumption decision) and to find an appropriate hotel for the trip. Participants were then presented with a webpage for a normal hotel that provided detailed information for the hotel, including the location, hotel facilities, room rates, and service standards, along with three online consumer reviews. The reviewers’ names and review contents were kept the same across the four hotel conditions, but the posting dates were varied. For the recent condition, in which the consumer reviews were dated two days prior, consumer reviews were labeled as “Reviews from two days ago”, whereas a label of “Reviews from six months ago” was used for the out-dated condition. To enhance the manipulation effect, we highlighted the words “two days” and “six months” (see Appendix B).

Participants in the search-product conditions were asked to imagine that they were planning to buy a printer either in two days or in six months and were then presented with a webpage for a normal printer that provided detailed information (the memory, speed, capacity), along with three online consumer reviews (see also Appendix B). Again, the reviewers’ names and review contents were also kept the same across the four conditions, but the posting dates of these reviews were marked either as having been posted two days prior or six months prior, according to the conditions.

Participants were required to review all of the information presented on the webpage. After that, the participants were then asked to indicate the perceived influence of reviews (i.e., “How influential do you think these online consumer reviews are as you consider whether to book this hotel (buy this printer)? 1 = not influential at all, 7 = very influential”). We also assessed the extent to which participants felt engagement by asking them to indicate how they felt (motivated, felt right, felt wrong) while they were reading the reviews using a 7-point scale (1 = not at all; 7 = a lot) (Lee, Keller, and Sternthal 2010). At the end of the study, participants responded to the questions for manipulation checks and provided their background information before being dismissed.

Results and Discussion

Manipulation check. For manipulation checks, we asked participants to answer this question: “To what extent do you think the hotel (printer) you were planning to book (buy) is an experience product or a search product? (1 = search, 7 = experience)”. A 2 \(\times\) 2 \(\times\) 2 ANOVA yielded a significant main effect of product type manipulation \((F(1, 210)=69.81, p<.01)\) and no other effects \((F<2.76, p>.10)\), suggesting that participants perceive the hotel more as an experience product \((M=4.11)\) and perceived the printer more as a search product \((M=2.77)\). All participants were able to correctly recall the time of reviews posted at the end of experiment, thus suggesting that they paid enough attention to the posting dates of the reviews.

Perceived influence and experienced engagement. We first analyzed whether the review date and the consumption timeframe of the purchase shifted the perceived influence of the online reviews. A 2 \(\times\) 2 \(\times\) 2 ANOVA for the perceived influence yielded a significant main effect for the posting date of the reviews, \(F(1, 210)=3.80, p=.05\), and more importantly, a significant two-way interaction between the posting date of reviews and consumption timeframe, \(F(1, 210)=35.17, p<.01\). No other significant effects emerged in this analysis \((F<1.42, p>.23)\). In the case of the hotel, recent reviews were perceived as more influential for participants facing a purchase decisions for near-future consumption \((M=5.62)\) than those whose decision was for distant-future consumption \((M=4.44), t(51)=4.19, p<.01\). In contrast, remote-past reviews were perceived as more influential for participants facing a distant-future consumption decision \((M=5.00)\) than those facing a near-future consumption decision \((M=4.18), t(53)=2.39, p<.05\) (see Fig. 1). The analysis of the search product (printer) revealed a similar pattern (see Table 2).

Measurements for experienced engagement exhibited high reliability \((\alpha=.89)\). Thus, these items were combined to form an index for further analysis. A 2 \(\times\) 2 \(\times\) 2 ANOVA for experienced engagement revealed a main effect for the posting date of the reviews, \(F(1, 210)=3.94, p<.05\), which qualified by a posting date of reviews \(\times\) consumption timeframe two-way interaction, \(F(1, 210)=51.14, p<.01\). No other significant effects emerged \((F<2.22, p>.10)\). When reviewing the recent hotel reviews, participants facing a near-future consumption decision reported that they felt more engaged \((M=5.54)\) than those facing a distant-future consumption decision \((M=4.56), t(51)=2.84, p<.01\). Conversely, when reviewing the out-dated reviews of the hotel, participants in the distant-future condition reported that they felt more engaged \((M=5.33)\) than those in the near-future condition \((M=4.25), t(53)=2.99, p<.01\) (see also Fig. 2). The analysis on the printer revealed a similar pattern (see Table 2). These results support the view that people become more engaged when the construal level of the review message matches their purchase consumption timeframe.

Mediation analysis. To further test the relationship between the engagement and the perceived influence of online reviews, we conducted a mediation analysis in accordance with Zhao, Lynch Jr., and Chen (2010) and Preacher, Rucker, and Hayes.
Table 2
Results of study 2.

<table>
<thead>
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<tbody>
<tr>
<td>Recent reviews</td>
<td>Hotel</td>
<td>5.62 (0.90)</td>
<td>4.44 (1.12)</td>
<td>4.18 (1.54)</td>
<td>5.00 (0.92)</td>
</tr>
<tr>
<td></td>
<td>Printer</td>
<td>5.43 (0.74)</td>
<td>4.39 (1.31)</td>
<td>4.42 (1.47)</td>
<td>5.07 (0.86)</td>
</tr>
<tr>
<td>Experienced engagement</td>
<td>Hotel</td>
<td>5.54 (1.07)</td>
<td>4.56 (1.42)</td>
<td>4.25 (1.76)</td>
<td>5.33 (0.88)</td>
</tr>
<tr>
<td></td>
<td>Printer</td>
<td>5.71 (0.66)</td>
<td>4.04 (1.40)</td>
<td>3.92 (1.44)</td>
<td>5.00 (1.09)</td>
</tr>
</tbody>
</table>

Notes: (1) Within the recent reviews and out-dated reviews conditions, means in the same row with different subscripts are significantly different at $p < .05$. (2) Standard deviations are in parentheses.
(2007, model 8), and used a bootstrapping procedure that generated a sample size of 5,000 to assess the regression models. The results of this analysis indicated that the engagement was predicted by the interaction between the consumption timeframe and the posting date of the reviews in the mediator model ($B = 2.41$, $t = 7.07$, $p < .001$). In the dependent-variable model, the engagement predicted the perceived influence of online reviews ($B = 0.54$, $t = 8.88$, $p < .001$), whereas the consumption timeframe × posting date of online reviews interaction was no longer significant ($B = 0.53$, $t = 1.81$, ns). Furthermore, the indirect effect of the consumption timeframe × posting date of online reviews interaction through the engagement was significant (95%, $B = 1.31$, CI = 0.88–1.81). In addition, the conditional indirect effect of engagement on perceived influence was negatively significant in the near-future purchase condition (95%, $B = -0.84$, CI = -1.19 to -0.55), whereas this effect was positively significant in the distant-future purchase condition (95%, $B = 0.48$, CI = 0.22–0.78). These results indicate successful mediation through engagement (see Fig. 3).

**Discussion.** The results from study 2 offer supportive evidence for Hypotheses 2 and 3 by showing that the relative influence of recent online reviews increases when consumers make near-future purchases, whereas the relative influence of remote-past reviews increases when consumers make distant-future purchases and that this construal-fit effect is driven by increased engagement. This pattern holds true regardless of whether the shopping product was an experience or a search product. Therefore, we will not include product type into our next studies.

Although it provided supportive evidence for the hypotheses, study 2 was limited in that we attained a truncated understanding of how people facing a near versus a distant-future consumption decision respond to various time-variant online reviews by presenting either remote-past or recent reviews to them; we did not present both types of reviews simultaneously. In a more realistic situation, however, consumers often encounter simultaneously online reviews that were just posted or that have been online for a while. Do consumers put more weight on reviews with a posting time that matches the consumers’ purchase timeframe when both remote-past and recent reviews are available? Our next study is therefore designed to explore this question.

**Study 3: Search Intentions Toward Recent versus Remote-Past Reviews**

In study 3, we tested consumers’ intentions to read related information when both recent and remote-past review messages were available. Based on the construal fit theory, we predict that consumers perceive the recent (vs. the out-dated) reviews as more informative and are more likely to search recent reviews as a reference in general. However, when both recent and remote-past review messages are available, the relative search intention for remote-past reviews increase for those who make decisions for distant-future consumption.

**Method.**

A total of 43 MBA students (20 females) from a major public university participated in this study for monetary compensation. The study used a 2 (consumption timeframe: near-future vs. distant-future) × 2 (posting date of reviews: two days ago vs. six months ago) mixed design. The consumption timeframe was the between-subject factor, and the posting date of the online reviews was the within-subject factor. Participants were randomly assigned to near-future conditions ($n = 23$) and distant-future conditions ($n = 20$).

The cover story informed the participants that the researchers were interested in how people search information before making purchase decisions. Participants were asked to imagine that they were searching for a restaurant for a gathering of friends either in the next day (i.e., temporally near) or in six months (i.e., temporally far) (Trope and Liberman 2003). Participants were further informed that the website they were using to search for restaurants provided some consumer reviews for reference. We then showed twelve online reviews to the participants, hiding the details of the review contents and disclosing only the review dates. The dates specified that half of the total reviews were left by previous customers two days prior, whereas the other half were released at least six months prior (see Appendix C). We then told the participants that because they were not formally registered users of the website, they could only choose to view the details of seven out of the twelve reviews. We recorded the total numbers for both the recent and the out-dated reviews that each
participant selected in their “to-view list”. The participants then answered several background questions and were compensated for their participation.

Results and Discussion

Unsurprisingly, we observed a significant main effect of posting date of reviews \( F(1, 41) = 88.32, p < .01 \), such that the participants chose more recent reviews \( M = 5.14 \) than remote-past reviews \( M = 1.84 \) to read further when both types of reviews were available. This result is consistent with previous research suggesting that recent messages are normally perceived as more informative and diagnostic (Berger and Iyengar 2012). But more importantly, this main effect of the posting date of reviews was qualified by the posting date of reviews \times consumption timeframe interaction, \( F(1, 41) = 4.53, p < .05 \). Specifically, participants in the near-future conditions chose to read more recent reviews \( M = 5.52 \) than those in the distant-future conditions \( M = 4.75, t(41) = 2.21, p < .05 \). In contrast, for the out-dated reviews, participants in distant-future conditions chose to read more \( M = 2.20 \) than those in the near-future conditions \( M = 1.48, t(41) = 2.04, p < .05 \) (see Fig. 4).

In sum, the findings from study 3 show that the temporal distance of the decision largely affects motivation in searching for recent versus remote-past reviews: when people are searching for information to make a decision regarding a distant-future (vs. near-future) event, they are likely to search more remote-past consumer reviews. Despite providing supportive evidence, study 3 controlled the specific contents and valence of the consumer reviews and focused only on the timing in terms of how long ago a customer-review was released. When both the contents and the valence of the consumer reviews are available (as is normally the case in a real online situation), particularly when some of the review contents reveal conflicting messages (i.e., some are positive while others are negative), how would people respond to the various time-variant consumer reviews considering the temporal distance of their purchasing events? In addition, both studies 2 and 3 limited our measure to the perceived influence and search intentions without directly assessing the shifts of consumers’ product evaluation. We examined these issues in the next study.

Study 4: Recent and Remote-Past Online Reviews with Different Valences

In real online retailing environments, consumers often encounter situations where a remote-past review is positive and recommends the product while a recent review is negative and complains about the product or vice versa. In study 4, we further tested our research hypothesis by considering the valence of online reviews. We simulated situations where the recent consumer reviews contradict the relatively older reviews. If the recent consumer reviews are indeed more influential for people making purchase decisions for near-future consumption, then it can be expected that the participants’ product evaluations should be more consistent with the valence of the recent reviews. In contrast, participants’ product evaluations should be more influenced by the valence of the out-dated reviews when they make distant-future purchases.

Participants in this study were asked to view several online reviews with the following combination of message positivity/negativity: (1) the recent reviews are positive while the out-dated reviews are negative (PosRec & NegOut) and (2) the recent reviews are negative while the out-dated reviews are positive (NegRec & PosOut). These reviews were presented to participants who were considering whether to buy a bottle of wine for different consumption scenarios. We assessed the participants’ attitudes towards the wine and their purchase intentions.

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Table 3
Results of study 4.

<table>
<thead>
<tr>
<th></th>
<th>PosRec &amp; NegOut reviews</th>
<th>NegRec &amp; PosOut reviews</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Near future</td>
<td>Distant future</td>
</tr>
<tr>
<td>Wine evaluation</td>
<td>4.36 (1.25)</td>
<td>3.74 (0.98)</td>
</tr>
<tr>
<td>Purchase intention</td>
<td>4.32 (1.16)</td>
<td>3.63 (0.97)</td>
</tr>
</tbody>
</table>

Notes: (1) Within the NegRec & PosOut reviews and PosRec & NegOut reviews conditions, means in the same row with different subscripts are significantly different at p < .05. (2) Standard deviations are in parentheses.

Method

A total of 110 MBA students (58 female) at a major public university participated in this study. The study was a 2 (consumption timeframe: near-future vs. distant-future) × 2 (contradicting reviews: positive recent reviews and negative past reviews vs. negative recent reviews and positive past reviews) between-subjects design.

The cover story informed the participants that the researchers were interested in how consumers purchase wines from online retailers. Participants were asked to imagine that they were going to have a birthday party either tomorrow or in six months and that they were searching for a special wine from an online retailer. Participants were further asked to imagine that after browsing the website, they found a favorite bottle within their budgets. Four consumer reviews with either positive or negative messages and with different review dates were presented with the introduction of the wine. Specifically, in the PosRec & NegOut review condition, participants read two positive reviews posted two days ago and another two negative reviews posted six months ago. In the NegRec & PosOut condition, the participants examined two negative reviews posted two days ago and another two positive reviews posted six months ago. We used words such as “terrible taste”, “will not buy any more”, and “fail to meet my expectations” for the negative reviews and utilized words such as “great taste”, “exceed my expectations”, and “want to buy more” in the positive reviews. Similar to previous studies, we controlled the reviewers’ user IDs and review content in terms of the total number of words (see Appendix D).

All of the participants were required to read the presented online reviews carefully and were then asked to indicate their evaluation of the product (“To what extent do you think the wine is a good or a bad one? 1 = very bad, 7 = very good”) and their purchase intentions (“How likely is it for you to purchase this wine? 1 = not likely at all, 7 = very likely”). After completing this task, participants responded to several background questions before being dismissed.

Results and Discussion

If our earlier findings hold even when the valence of reviews is taken into consideration, it is anticipated that the participants who make distant-future decisions would be relatively more affected by the out-dated reviews. Therefore, compared with near-future purchase decision, consumers’ wine evaluations and purchase intentions would be more likely to shift in accordance with the valence of the respective remote-past reviews when making distant-future purchase decisions. For example, if the valence of the out-dated (recent) reviews were consistently negative, the participants would generate relatively negative attitudes toward the wine when making their distant-future (near-future) purchase.

A 2 × 2 ANOVA of wine evaluation first showed a significant main effect for the mix of the recent and remote-past reviews (F (1, 106) = 20.41, p < .01), suggesting that the participants who were provided with PosRec & NegOut reviews were more likely to evaluate the wine positively (M = 4.05) compared to those presented with a mix of NegRec & PosOut reviews (M = 3.16). But more interestingly, this main effect was qualified by the consumption timeframe × the recent-past review mix interaction, F (1, 106) = 8.61, p < .01. Specifically, participants who were provided with PosRec & NegOut reviews were more likely to evaluate the wine positively when making a near-future consumption decision (M = 4.36) than when making a distant-future consumption decision (M = 3.74, t (53) = 2.02, p < .05). However, participants who were provided with the NegRec & PosOut reviews were more likely to evaluate the wine positively when making a distant-future decision (M = 3.43) than when making a near-future consumption decision (M = 2.89, t (53) = 2.16, p < .05) (see Table 3).

Similarly, an ANOVA for the purchase intentions yielded a main effect for the recent-past review mix (F (1, 106) = 19.23, p < .01), and this main effect was also qualified by the consumption timeframe × the recent-past review mix interaction (F (1,106) = 9.69, p < .01), suggesting that the participants who were provided with the PosRec & NegOut reviews were more likely to purchase the wine when making a near-future consumption decision (M = 4.32) compared to when making a distant-future consumption decision (M = 3.63, t (53) = 2.40, p < .05). In contrast, the participants provided with the NegRec & PosOut reviews were more likely to purchase the wine when the purchase decision was for the distant-future consumption (M = 3.39) compared to when the decision was for the near-future consumption (M = 2.93, t (53) = 1.98, p = .05). These findings are consistent with our earlier results and further confirmed our hypotheses even when the valence of reviews was taken into consideration.

1 That is, a mix of either PosRec & NegOut online reviews or NegRec & PosOut reviews.
General Discussion

A long stream of research on WOM has demonstrated that consumer reviews have a significant impact on what people buy (Godes and Mayzlin 2004, 2009; Iyengar, Van den Bulte, and Valente 2011) and that the volume and valence of online reviews have an important ability to shift consumer decisions (Duan, Gu, and Whinston 2008). Nevertheless, the time dimension and, in particular, the posting date of online reviews has not been sufficiently investigated. In this paper, we draw on the construal-fit literature to examine how temporal distance affects consumers’ response toward reviews that are posted online at different times. Through four studies, we show that the out-dated consumer reviews may not necessarily be perceived as less influential when consumers make online purchases. Instead, the perceived relative influence of recent versus remote-past reviews is partially determined by whether a consumer is making a purchase decision for immediate consumption or for delayed distant-future consumption. More importantly, it is the construal fit between one’s purchase time and the construal level of the recent and the out-dated reviews that determine the perceived influence of online reviews posted at different times. When consumers make a purchase decision for distant-future consumption, the natural mental construal level that is associated with their decision is high, which is congruent with the relatively higher construal level of the out-dated reviews. As a result, consumers become more engaged when processing this type of review for their distant-future consumption decisions. Similarly, the mental construal level associated with the consumers who make near-future consumption decisions is low, which is consistent with that of the relatively lower construal level of recent reviews. Thus, consumers tend to rely more on recent reviews when making near-future purchases.

In addition, we demonstrated that how consumers construe the online reviews depends on the time elapsed since the date on which a review was posted, regardless of the product type (studies 1 and 2). We also expanded our test of the construal-fit effect by assessing consumers’ search intentions toward recent versus remote-past product reviews (study 3) and by measuring whether the consumers’ product evaluation shifted along with the valance of reviews (study 4). These findings jointly suggest that experiencing the construal fit not only enhances the persuasiveness of online reviews but also influences consumers’ information searching behavior, and this construal-fit effect between the posting date of online reviews and a consumer’s purchase timeframe hold true for both experience and search products.

Although we have demonstrated repeatedly that the relative impact of remote-past reviews increases when consumers make distant-future consumption decisions, it is important to note that recent online reviews are more informative and more diagnostic in general (as we demonstrated in study 3) when evaluating products. The key finding of the present study is that the relative impact of the out-dated and the recent online reviews is dependent on whether their posting time matches the construal mindsets of the target consumers at the time that they evaluate the review messages. When a construal fit exists between the out-dated online reviews and the consumers’ consumption time-frames, these easy-to-ignore remote-past messages exert a significant impact that cannot be neglected. Unfortunately, the common belief intuitively (and incorrectly) assumes that the out-dated online reviews are less useful than recent reviews. Thus, a large number of remote-past online reviews are insufficiently used and poorly managed by online retailers.

Theoretical Contributions

The present research makes several contributions to the literature of retailing. With the advent of information technology, e-stores and online shopping have become important aspects of a retailer’s strategy, and the product reviewing system has become an indispensable tool for online retailers (Pan and Zhang 2011). Although the digitization of online reviews has made it possible to record a review’s exact posting time, little research has recognized this unique characteristic of online reviews when examining their impact. Unlike previous studies that have primarily focused on the volume and the valence of online reviews, we are among the first to identify and examine the unique characteristic of the posting time of these reviews. By demonstrating the construal fit between the timeframe of consumption and the review posting dates, our research opens a new window to investigate the impact of online reviews on consumer decisions, thus offering a new way to improve the effectiveness of product reviewing systems for online retailers.

Our research also enriches the construal-fit effect on improving the persuasiveness of online WOM. Previous research mainly focused on the interplay of different psychological distances (e.g., social distance and temporal distance) on consumers’ responses to the persuasive message (Kim, Zhang, and Li 2008; Zhao and Xie 2011), while the current study reveals that the matching between past temporal distance (of reviews) and future temporal distance (of decisions) also makes the external message more persuasive. In the context of online retailing, most product reviews are posted by socially distant strangers, and thus there is little room for online retailers to improve the persuasive power of online reviews by matching the social distance of posters and the temporal distance of consumption. In situations such as these, where matching consumers’ consumption timeframe with the persuasive messages (e.g., online reviews or eWOM) that were posted either by socially close or distant others is not applicable (particularly), our research suggests an alternative way of improving the persuasiveness of online reviews. This alternative involves focusing on the timing dimension of the reviews and simulating construal fit through matching the past temporal distance of review posting and the future temporal distance of consumption.

Moreover, we took a step forward and further explored why consumers perceived the online reviews to be more useful and influential when they experienced a construal fit. Specifically, we found that experiencing a construal fit made people become more engaged while processing the reviews (study 2). The driving role of engagement was also confirmed in study 3, such that people are more motivated to actively search consumer reviews that match with their consumption timeframe and
mindset. These results contribute to a better understanding of the mechanism that underlies the construal-fit effect on improving the persuasiveness of online reviews.

Managerial Implications for Retailing

The managerial implications of this research for online retailers are multifaceted. First, our findings serve as a warning for online retailers who try to influence consumers’ product evaluation and purchase decisions through their product review systems; the easy-to-be-ignored characteristic of online reviews—the posting time—need to be paid more attention. Specifically, although recent online reviews may be more informative than remote-past reviews in general, the relative influence of recent reviews decreases, whereas the out-dated reviews become more useful when consumers make future-distant consumption decisions (e.g., advanced purchase). Therefore, the relative influence of online reviews in shaping consumer decisions depends not only on its recency but also on how its posting time matches the consumption timeframe of prospective consumers. From a practical perspective, online retailers should consider whether to make more remote-past product reviews available and to present these reviews in a more salient way according to consumers’ purchase timeframes (e.g., immediate or advanced purchase). Although it may sound bold to suggest that online retailers provide more remote-past reviews than recent reviews to consumers who made advance purchase online, at the very least, retailers should adopt a more flexible strategy to present online reviews to maximize their persuasive power. As revealed by our study 2, participants perceive remote-past reviews as relatively more influential when their purchase decisions are for distant-future consumption than these purchases are for near-future consumption. Therefore, for such consumers, instead of making the most recent reviews readily available as a default practice, online retailers should also make remote-past reviews (especially for those with positive valence) available and salient.

Second, our research offers new insights for online retailers in developing their intelligent recommendation system. Most such recommendation systems generate product and consumer purchase experiences (i.e., reviews) based either on the similarity between people or on the similarity between product. For instance, “People-like-you-also-bought (product)” is a typical example for recommendation based on the similarity between people—generating a recommendation for the new customer based on what others who are similar to them might be interested in. Alternatively, the recommendation could be generated based on the similarity between products. For example, a travel website may recommend a travel guidebook to Japan for someone who just purchased a travel guidebook to China. Based on our findings, such intelligent recommendations system could be further upgraded by incorporating with the recommendation rationale of construal fit—generating product information and reviews messages to consumers that best match their construal mindset. As we found across the studies, the relative influence of remote-past (recent) reviews increases when consumers make purchase decisions for distant- (near-) future consumption. Thus, when potential consumers indicate their intended time horizon for a purchase or consumption, retailers could strategically “recommend” certain consumer reviews that best match the construal mindset of the prospective consumers to increase the possibility for a deal.

Finally, our research calls for a re-examination of the existing sales forecasting models that incorporate mainly the volume and the valence of consumer reviews (e.g., Chevalier and Mayzlin 2006; Duan, Gu, and Whinston 2008; Liu 2006) but fail to recognize the changes of relative impacts of recent versus remote-past reviews when consumers make purchase decisions for consumption at different time points. To date, increasingly more online retailers are using consumer reviews to predict future product sales. However, most sales forecasting models typically assume that all consumer reviews posted at different times have the same impact on product evaluation and sales. Following this line of assumption, hearing about a new movie from two persons today has the same impact as hearing about it from one person today and from one person in the last month. Apparently, these assumptions seem less realistic (Berger and Iyengar 2012). As our research reveals, recent reviews are more influential and thus may carry more weight to influence consumers’ decisions for near-future consumption. In a similar vein, the relative influence of remote-past reviews increases for distant-future consumption decisions. Therefore, the relative weights of remote-past reviews and of recent reviews should be assigned carefully in sales forecasting models by incorporating the intended purchase timeframe. A sales-forecasting model taking into account the timing dimension of the online reviews shall bring more accuracy in sales prediction and improve the efficiency of sales forecasts for online retailers.

Limitations and Future Research

The current study also raises several issues that are relevant to future research on this topic. It is important to first note that although we controlled the content of the recent versus remote-past product reviews in our experiments, in the real world, the content and nature of reviews may change over time. For example, reviews posted earlier (initial reviews) may focus on the broad aspects of a product, whereas reviews posted later may focus on more the specific attributes of the product. Although we believe that the different construal levels of recent versus remote-past reviews are not due to the nature of review information because the review contents were controlled in our studies, future research could explore whether the nature of initial and later reviews differs in its focus by analyzing the review content from real websites.

Second, in most cases, readers do not know the individuals who posted the online reviews. However, with social network companies such as Facebook and Twitter encouraging their users to share their consumption experiences, online product reviews may embrace a new era in which more consumers are reading reviews written by people close to them. Compared with conventional online reviews that are primarily posted by strangers, how would the social distance as perceived by the reader affect his or her attitudes and judgment toward the reviews? In particular, how
would this social distance interact with the temporal distance of the consumer’s purchase decision in influencing the impact of online reviews posted at different times? Future research addressing these questions will enrich our understanding of the effectiveness of online consumer reviews. Additionally, people normally perceive a bigger distance between the posters and the readers for online reviews than for offline reviews. Thus, from the perspective of CLT, a likely main effect is that online reviews are construed at a higher level than those generated and transmitted offline. Future research investigating the interplay between temporal distance and the impacts of online reviews versus offline reviews should take into account this possible main effect.

Third, prior research suggests that consumers pay different levels of attention to information depending on the stage of their purchase (Pettty and Cacioppo 1979). In the early purchase stage, consumers are usually not committed to a particular product and may simply rely on the aggregated statistics of online reviews (e.g., the total number of ratings, the average/highest/lowest product rating). According to CLT, this type of summary information may induce a higher construal level mindset, whereas presenting online reviews in the separate format may induce a relatively lower construal level. A fruitful direction for future studies would be to focus on the construal fit between review contents (e.g., abstract vs. concrete product information, as mentioned in the reviews).

Finally, although we restricted the total number of reviews that participants could view in study 2, it is worth noting that consumers can search as many reviews as they wish without such restriction in the real world. Because a higher construal mindset may lead to a general desire to consider more information (Liberman, Sagristano, and Trope 2002; Trope, Liberman, and Wakslak 2007), it can be expected that consumers may choose even more reviews (especially remote-past reviews) when making purchase decisions for distant-future consumption. Future research focused on this issue shall further enrich our understanding toward the time-variant effects of online consumer reviews.

Acknowledgements

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Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at http://dx.doi.org/10.1016/j.jretai.2014.05.002.

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