

Triggered Essential Reviewing: The Effect of Technology Affordances on Service Experience Evaluations

Abstract

This paper responds to the recent call for understanding the nature and consequences of the digital mediation of everyday experiences. We do so in the context of online opinion sharing. We propose that the unique design features of mobile computing devices and the intention and purpose of their users, meld into a technology affordance we label: *Triggered essential reviewing*. We empirically investigate the effect of this technology affordance on opinion characteristics (i.e., timing and length), and outcomes (i.e., opinion valence and content). We find that triggered essential reviewing engenders opinions that cover a narrower range of aspects of the experience and that it produces a negative evaluative bias - a bias that mitigates over time.

Our work makes two contributions to the application of affordance theory in Information Systems. First, it shows the importance of IT design in studying experiential computing. While not taking a deterministic view of technology, we validate the notion that different technology designs produce a variation of effects around a predictable central tendency. Second, it empirically demonstrates that the affordances of embodied digital experiences have an effect on actual behavior as well as on the outcome of the experience itself.

Keywords: Technology affordance, mobile devices, user-generated content, opinion platforms.

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1 Introduction

Human activities are increasingly computer mediated and the vision of ubiquitous computing is quickly becoming a reality. As Weiser, who introduced the term put it: “The most profound technologies are those that disappear. They weave themselves into the fabric of everyday life until they are indistinguishable from it” (Weiser, 1991, p. 94). Over the past 20 years, digital computers based on the Von Neumann architecture (von Neumann, 1945) have increasingly blended into the fabric of everyday activities. The harbinger of this trend is the smartphone, the first digital computing device in history to be uniquely associated with an individual and to be always in the vicinity of that person (Watson et al., 2002).

However, the smartphone is just at the surface of the ubiquitous computing trend. Digital computers are disappearing from view as they take on new form factors: from intelligent cameras scanning faces of fans entering a stadium, to automobiles able to negotiate traffic autonomously, to wearable items like watches, wristbands and eyewear.

While practice moves quickly toward the realization of the ubiquitous computing vision, information systems research in this area remains embryonic and theorists lament that little of the mainstream organizational information systems research applies: “[...] experiential computing calls for a reorientation of our focus from task performance and information processing to lived experiences of everyday life activities that are digitally mediated. User needs are, therefore, much broader than informational needs for task performance in organizations, reflecting deeper basic human needs and values” (Yoo, 2010, p. 217). What motivates our research is the call for information systems scholars to investigate “*the nature and consequences of the digital mediation of everyday experiences*” (Yoo, 2010, p. 220).

This study is situated in the context of online review systems, or opinion platforms, defined as IT-enabled information systems “where individuals exchange experiences and opinions on a variety of topics ranging from products and services, to politics and world events” (Dellarocas, 2006). These evaluations can be valuable for both readers, who benefit from the experience of other users, and organizations that receive free publicity about their products and services. Their potential value has attracted significant academic interest over the last decade. The accumulating body of knowledge shows that opinions valence leads to

greater sales (Anderson and Magruder, 2012; Luca, 2011), that user-generated product information is more influential than company-provided information (Bickart and Schindler, 2001; Gu et al., 2011) and that reviews are helpful decision aids for readers (Mudambi and Schuff, 2010).

The antecedents of online opinion contribution, such as individuals' motives, have received less attention (Cheung and Lee, 2012). Surprisingly, given the rise to prominence of online review systems, and their status as a prototypical example of Web 2.0 technology, information systems scholars have devoted very little attention to their design and to the effect of design choices. Opinion platforms enable individuals to post their personal evaluations of products or services for the benefit of a larger community of users and potential customers. However, despite claims by industry players of "Unbiased hotel reviews, photos and travel advice for hotels and vacations" (TripAdvisor) and "Unbiased reviews by real people," (Epinions) recent academic research shows that publicly expressed evaluations may not simply reflect the independent, personal and unbiased opinion of the reviewer (Muchnik et al., 2013). Rather, they are often influenced by the opinions of others (Moe and Schweidel, 2012) and by timing effects (Li and Hitt, 2008). In this study we complement previous work and focus on the design of opinion platforms.

Specifically, we ask: How and why do service evaluations produced via mobile-enabled and Web-based opinion platforms differ? While the specific context of our study is online reviews, we believe that our research findings will be generalizable to all forms of user-generated content.

In the pursuit of this research question we adopt a "technology-shaping perspective" (Markus, 2005) focused on the concept of technology affordance (Majchrzak and Markus, 2013). Recent theorizing posits that the study of the social and organizational applications of information technology requires a deep understanding of the interplay of technological and human resources. The approach breaks with the tradition characterized by either technological determinism or institutionalism (Markus and Silver, 2008) and focuses directly "on the non-deterministic interactions between people or organizations and the technologies they use" (Majchrzak and Markus, 2013, p.3). As a relational construct, technology affordance helps in the simultaneous study of evolving technology characteristics and individual capabilities and intent. The paper is organized as follows: In the next section we describe the theoretical

framework for the study. We then use it to articulate a unique technology affordance of mobile-enabled online reviewing as compared to Web-enabled online reviewing. We hypothesize and test the effect of this technology affordance on review characteristics (i.e., timing and length), and reviewing outcomes (i.e., opinion valence and content). The paper concludes with a discussion of the findings and their implications for affordance theorizing and opinion platform design.

2 Theoretical Framework

The literature on experiential computing focuses on “digitally mediated embodied experiences in everyday activities through artifacts that have embedded computing capabilities” (Yoo, 2010, p. 2013). The attention to experiential computing stems directly from the constantly evolving nature and changing form-factors of computing artifacts, as well as the embeddedness of computing capabilities in “everyday artifacts” (i.e., previously non-digitalized objects). Personal mobile computing devices such as the iPod and the iPhone ushered in what Steve Jobs referred to as the post-PC era (Jobs, 2010). Because of the magnitude of this shift the proponents of experiential computing call for IS scholars to broaden their attention beyond organizational computing and to redefine the notion of “users” beyond that of individuals utilizing computers to improve their cognitive processes in the narrow context of knowledge work (Lamb and Kling, 2003). In experiential computing users are individuals assuming social roles (e.g., travelers, cycling partners, friends) and interacting with computing devices and objects with embedded computing capability. They do so not only when engaging in cognitive tasks, but also when participating in the full range of life experiences – from sharing emotions to running chores (Wang et al. 2013). These users don’t perceive computing as a separate activity, divorced from their life endeavors. Tweeting represents a good example. When a person Tweets her emotional state (e.g., “My heart is broken and all my thoughts and prayers are with everyone in Louisiana”) they are not engaging in “computing.” Rather, they are engaging in “sharing” with other people. It is critical to note however that Twitter algorithms and the computing device the individual is using (e.g., a desktop computer, a smartphone or a car in-dash computer) mediate the activity.

This article focuses on experiential computing at the individual level, in the specific context of online opinion sharing. It examines online reviewing as the focal endeavor in an effort to better understand how the computer mediation of everyday activities “will likely alter the meaning and patterns of familiar social interactions” (Yoo, 2010 p. 216)

Understanding the interplay of people and technology that characterizes the experiential computing phenomenon requires theories that *simultaneously* account for features of technology as well as characteristics of individuals and their intentionality. Information systems scholars and organizational researchers recently adopted the affordance perspective (Zammuto et al., 2007). While they have mostly applied it to the organizational context (Leonardi, 2011; Markus and Silver, 2008), ecological psychology first introduced the affordance perspective as a theory of *individual* perception. Specifically, an affordance represents “opportunities for action” as perceived by an organism (e.g., an animal, a human) in its environment (Gibson, 1977). Early development of the concept focused on physical characteristics (e.g., body scale) of the animal in relation to the objects in its surroundings (e.g., Warren, 1984). More recent theorizing suggests that such physical characteristics are only a proxy for actual ability (Chemero, 2003). Thus, an affordance exists at the intersection of an individual’s ability and the structural characteristics or features of an object that the animal senses. Affordances are “properties of the animal-environment system that determine what can be done” (Stoffregen, 2003, p. 124). Note that as an action potential, for an affordance to exist it is not necessary that the entity “picks up information about the specific affordance” but rather that “the possibility exists for the affordance to be realized” (Bærentsen and Trettvik, 2002, p. 53).

2.1 Affordance in Information Systems Research

In keeping with the original formulation, technology affordance is a relational concept capturing the potential for action that emerges through the interaction of information technology and social agents: individuals and/or organizations (Majchrzak and Markus, 2013). As a possibility for action, rather than the action itself, an affordance is conceptually separate from a given behavior and it is merely the

necessary precondition for the behavior to occur. However, affordance is a very powerful concept for researchers interested in understanding and explaining *behavior and technology use*. Gibson's original intent was to explain how animals orient themselves to their environment: "We can discriminate the dimensions of difference [between objects] if required to do so in an experiment, but what the object affords us is what we normally pay attention to" (Gibson 1986, p. 134). The affordance perspective allows information systems researcher interested in explaining observed behavior to focus attention only on the technology features that are "of material difference," rather than the mere physical differences, between technologies. In this context "something is 'material' if it makes a difference in the current situation" (Leonardi, 2010, p. 8).

A technology affordance represents a "relationship between a technical object and a specified user (or user group) that identifies what the user may be able to do with the object, *given the user's capabilities and goals*" (Markus and Silver, 2008, p. 622). Thus, a technology affordance simultaneously stems from the *technology design features* of the system being utilized and the *purpose and goals* of those using it (Treem and Leonardi, 2012). It follows that the same technological artifact provides different action potentials for individuals with different characteristics and/or intentions. In other words, we will witness different behaviors enacted by different people with the same technology, or even by the same person at different times (Markus and Silver, 2008; Bang et al., 2015). In short, technology affordances are about *actions involving technology* by individuals *intentioned to accomplish* a particular objective (Faraj and Azad, 2012). While generally accepted in the literature the above point has a nuanced interpretation and the term affordance is used with related but different meaning by different authors (Faraj and Azad, 2012, Bang, et al. 2015).

Our primary objective in this research is to understand *the nature and consequences* of the digital mediation of online opinion sharing. As a consequence we focus on broad variation of effects around a central tendency (Markus, 2005) stemming from the affordances associated with different technology platforms – namely the mobile and desktop – rather than the wide variety of "unexpected, situated, and emergent actions that actors may want to engage in with their devices" (Faraj and Azad, 2012 p. 252).

Our work is coherent with Gibson's original theorizing and its original adaptation in IS (Markus and Silver, 2008) whereby a technology affordance develops through the interaction between the individual and the object – subject to the individual's intentions – and results in some observable behavior.

While an affordance is neither a property of the technology itself nor a characteristic of the individual utilizing the technology, both of these elements are important to discuss in order to theorize the potentials for actions stemming from the affordance. Individuals are increasingly surrounded by, and interact with, computing devices that have form factors that no longer resemble a "computer." Moreover, these devices are more portable and connected than traditional personal computers (Watson et al., 2002) and are therefore "disappearing from view" while becoming "seamlessly integrated into the world at large" (Weiser, 1991, p. 94). Touchscreen smartphones, in-dash computers in automobiles, wearable personal health trackers, or heads-up displays such as Microsoft HoloLens represent a new breed of computing devices that (attempt to) intertwine seamlessly with our daily lives. As a basis for theorizing differentiating affordances available to individuals generating content via the mobile or desktop platform, in the next section we discuss technical and usage differences.

2.1.1 Technology Design Features

We are aware of no research studying the design of mobile-enabled opinion platforms. However, recent work has used the affordance perspective to understand mobile shopping behavior (Bang et al. 2015), and there is a growing literature seeking to understand the use of mobile devices as compared to personal computers. Mobile computing devices, such as smartphones and tablets, have unique form-factors (i.e., size and shape) and connectivity features that make them qualitatively different from Internet-connected personal computers (Watson et al., 2002). Mobile devices are ubiquitously available (Gebauer et al., 2010), always on (Pitt et al., 2011), and constantly connected (Holtgraves and Korey, 2013), thus providing the ability to quickly access and generate content (Fischer et al., 2013). They have dedicated apps, typically in the form of a stripped down version of a web-based application, designed to increase immediacy of use. Conversely, they limit extensive writing due to their small screen sizes and lack of

peripherals (Fischer et al., 2013; Licoppe and Smoreda, 2005) providing only limited revisability of content (Clark and Brennan, 1991). As use occurs “on-the-go,” individuals often multi-task (Lee and Benbasat, 2004) and are therefore subject to greater distractions than traditional personal computer users (Gebauer et al., 2010).

2.1.2 Individual Intention and Purpose

The bulk of opinion platforms research has focused on the aggregate effects of online reviews (e.g., Anderson and Magruder, 2012; Gu et al., 2011; Mudambi and Schuff, 2010). The motives of the individuals who contribute their opinions have received much less attention (Cheung and Lee, 2012). Literature in this area hypothesizes that people post their opinions for a range of reasons: desire for social interaction and belonging, desire for economic incentives, concern for other consumers, self-worth and reputation enhancement (Cheung and Lee, 2012; Hennig-Thurau et al., 2004). Empirical evidence suggests that only those individuals interested in a product or service will buy it (i.e., purchasing bias) and that among customers, individuals with extreme opinions are more likely to contribute their evaluations (Hu et al., 2009). While no study we are aware of has focused on opinion writing activities using mobile devices, there is an emerging literature on the differences between general mobile and Web Internet use. This work identifies two classes of mobile behaviors: immersive and extractive. The former represents extensive work or leisure activity that fully engages the user, while the latter refers to narrow purposeful information seeking activities like checking the weather or getting directions to a restaurant (Cothey, 2002). Recent research shows that, since information access “on-the-go” is the defining characteristic of the mobile platform, compared to laptop use, mobile devices display more extractive usage patterns over immersive behavior (Humphreys et al., 2013a). Note that on-the-go use is not a technology characteristic and it is not equivalent to device portability. Portability refers to the ability to easily carry the device and work anywhere – stemming directly from technology design features such as weight, size, network connectivity, and battery life. On-the-go use refers to individuals’ intention of “fitting in” or embedding digital mobile use in the course of daily life, such as quickly checking email while on the elevator, or

posting an Instagram update when one's dinner date goes to the restrooms. Claisse and Rowe (1987) point to the centrality of individuals' intentions and purpose in technology use: "Calling the tax collector and expressing your love for someone are two [...] communicational realities, which are too often referred to by the same word: the telephone call." (p. 209). Similarly, we argue that individuals' intentions contribute to their perception of the affordance of available technologies thus impacting both the manner and the outcomes of online opinion sharing.

2.2 Triggered Essential Reviewing

We propose that the unique design features of mobile computing devices, when coupled with the intention and purpose of the users who orient themselves toward that technology, meld into a technology affordance. We term such affordance: *Triggered essential reviewing*. Explaining the behavior of technology users in terms of affordance has several advantages (Hutchby, 2001; Treem and Leonardi, 2012). It offers the ability to understand consistency of effects across individuals without resorting to technology determinism. It also enables the generalization of research findings without ignoring the fact that technologies do differ in terms of their form and function, and that these differences are known to influence behavior (Markus, 2005). Following Treem and Leonardi (2012) we conceptualize triggered essential reviewing by hypothesizing how the production of reviews using a mobile digital device differs from the traditional activity of contributing online opinions via a website. In other words, triggered essential reviewing is the affordance that captures the material (i.e., critical) differences in the possibility for production of user-generated content via the mobile platform versus the desktop.

The defining characteristics of triggered essential reviewing are its triggered and essential nature.

"Triggered" refers to the action possibility of posting a contribution on-the-go, immediately after receiving a stimulus to do so. Such stimulus could be proximal to the actual experience, or distal.

Consider an all too common example. At a dinner party a group of friends cannot recall the name of a prominent political figure or actor. While in the past satisfying this curiosity immediately (i.e., the trigger) was difficult or impossible, it is common today for someone to use his or her smartphone to instantly find

the answer on sites like Wikipedia. Unlike the desktop, mobile devices enable ubiquitous access to the data network – meaning that they allow connectivity anytime from any location. Recent work focusing on online shopping shows that by virtue of the ubiquity of mobile devices, shopping behavior by mobile users is, on average, more heterogeneously distributed over time than that exhibited by shoppers using the browser (Bang et al. 2015). In other words, because they don't face an accessibility constraint, on a daily basis mobile shoppers engage in the behavior across a wider time interval than shoppers using a personal computer. The research on extractive mobile device use (Humphreys et al., 2013a) also supports this tendency. Users who intend to respond to the trigger orient themselves toward the mobile platform with the intention of fitting the activity of opinion writing in their current activities – an extractive behavior. Conversely, those individuals who see opinion writing as an immersive experience may delay the task and orient themselves toward the desktop.

“Essential” refers to the writing of opinions focused on the kernel, the core, of the event the individual experienced. The word *essence* here is used in its philosophical connotation (Husserl, 1931) as the fundamental elements of an entity (i.e., the basic, real, and invariable nature of an event). In the context of online reviewing, therefore, “essential” refers to the subjective elements that represent the core of the specific service experience the individual is writing about when producing the review – i.e., the individually perceived essence of the event.

The computer-mediated communication literature has shown that, while many important communication cues are filtered by technology channels, individuals are able to convey a range of emotional cues adapting their writing style and using emoticons in online communication (Walther 1996; Derks et al. 2008). We are aware of no previous research addressing the specifics of online review creation via the mobile platform. We theorize that those individuals who engage in extractive behavior by orienting themselves toward the mobile platform in response to a triggering event, will prioritize the essential elements of their experience when writing the review. Previous work on text messaging, typically an extractive behavior, lends support to this notion and shows that the language used by individuals writing text messages is elliptical (Holtgraves and Korey, 2013). That is, users favor abbreviations, acronyms,

emoticons, as well as the omission of vowels, subject pronouns, and punctuation. These results point to a tendency for mobile-based communication to be more focused and to favor a writing style that speeds up text input when compared to traditional computer-mediated communication. They suggest that the mobile form-factor (e.g., small screen, small virtual keyboard) and the context of its use (e.g., multi-tasking, on-the-go use) make it more difficult for users to produce long prose, review and edit their work. In the following section we formulate specific hypotheses about the effects of the proposed affordance.

2.2.1 Effects of Triggered Essential Reviewing

We posit that triggered essential reviewing will result in broad variations in behavior but that predictable patterns emerge in the aggregate. In the context of opinion platforms, proximal triggers may include the actual service encounter, the receipt of the product in the mail, or its first use. Triggering could also be removed from the experience (i.e., distal) and occur endogenously (e.g., a spontaneous memory of the event) or exogenously (e.g., a friends' inquiry about the event, or a solicitation email from a service provider). As discussed earlier, it is the idiosyncratic design of portable computing devices, coupled with able and motivated users, that allows for a review to be posted immediately upon triggering. Research shows that recall of an event decays over time (Walker et al., 1997). Thus, we theorize that in the service context the actual experience produces the strongest trigger.

Note that we do not hypothesize a deterministic explanation for this effect. It is not the features of the mobile device in isolation that lead to differences in observable behavior. For example, individuals who carry a smartphone to mainly call and be reachable by voice would not perceive the mobile as an instrument for producing online reviews while on the go. Conversely, those individuals without a mobile could only post their comments if they happen to be at the computer when the trigger occurs. However, when extremely motivated to share their experience, they could search for a connected device in order to contribute their opinion immediately.

A great variety of predictable and emergent behaviors may occur. Such variety notwithstanding, we posit that the triggered essential reviewing affordance at the intersection of mobile characteristics and the

abilities of many of their users, will make it so that mobile users disproportionately orient themselves to the device to contribute a comment when triggered. On average, this will result in a greater proportion of reviews produced in the immediacy of the experience.

Hypothesis 1: As compared to web-based reviewing, triggered essential reviewing leads to a greater proportion of reviews contributed on the same day as the service encounter.

A technology shaping perspective suggests that triggered essential reviewing will result in a central tendency for opinions produced via mobile devices to be, on average, shorter than those contributed via web-based review systems. This hypothesis does not stem deterministically from technology features. It does not purport to predict individual behavior. Some people are able to produce, and enjoy producing, long prose on small portable devices, while others tend to be short and to the point even when they have at their disposal the full array of functionalities of modern word processors. Cultural differences, personal traits, motivation and a multitude of other individual differences may account for this variability.

However, we posit that the triggered essential reviewing affordance will, on average, result in shorter reviews. Users carrying a mobile will perceive it as affording “essential” rather than “in-depth” reviewing and orient toward it when seeking to produce opinions that are shorter and more focused.

More fundamentally, we posit that the triggered essential reviewing affordance changes the process of opinion writing and, in so doing, affects the content of the review. Previous research shows how, in decision scenarios, multitasking constrains the amount of time and cognitive resources devoted to the task (Zuckerman and Chaiken, 1998). As a consequence, people process information heuristically, taking mental shortcuts to accomplish their goal rather than process information systematically. We posit that the difficulty in revising, editing and rewriting an opinion using a device with a small screen and no peripherals, coupled with the drain on their time and attention caused by on-the-go use (Gebauer et al., 2010), engenders contributions that focus on a few elements of the experience (i.e., go to the essence of the experience). Conversely, individuals who contribute their review through the web-based review platform have a greater ability to write extensively, to revise and to reflect on the text they have produced.

This reflectivity and the greater revisability (Clark and Brennan, 1991) of their work allow them to more completely assess their experience, leading to contributions that have greater depth and breadth of content.

Hypothesis 2: As compared to web-based reviewing, triggered essential reviewing leads to shorter reviews.

Hypothesis 3: As compared to web-based reviewing, triggered essential reviewing has a negative impact on the descriptive depth and breadth of reviews.

We now turn to the impact of triggered essential reviewing on the valence and affective polarity of opinions. The cognitive psychology literature offers substantial evidence of an asymmetric emotional response to positive and negative events (Baumeister et al., 2001). This phenomenon stems from two additive biases: a) individuals perceive positive events to outnumber negative ones; b) affect fades faster over time for negative than positive events (Walker et al., 2003). The first bias, consistently documented over time and through different methodologies (Chwalisz et al., 1988; Suedfeld and Eich, 1995; Waldfogel, 1948), is rooted in one of the most basic psychological mechanisms: people actively seek positive experiences and avoid negative ones (Walker et al., 2003). Research on opinion platforms points to this very mechanisms as the basis for the self-selection bias that manifests itself in the J-distribution typical of online ratings (Hu et al., 2009).

The second phenomenon, called the fading affect bias, is subtler. Humans are thought to have evolved a largely unconscious “psychological immune system” (Gilbert et al., 1998). They respond to negative events with both short-term mobilization and long-term minimization responses (Taylor, 1991). Mobilization consists of psychological arousal and emotional responses designed to cope with the immediate consequences of the event. Minimization consists of cognitive and behavioral responses that, over time, reduce the lasting effects of the event. Minimization effects are asymmetrical, in that negative effects fade faster and more strongly for negative events than positive ones. For example, early work documents stronger weakening of free-recall negative emotional memories over positive ones during a

three-week period (Hulsey Cason, 1932). More recent work corroborates these findings using different time lags and methodologies (Holmes, 1970; Suedfeld and Eich, 1995). Specifically, research monitoring the fading affect bias over long periods of time (i.e., 3.5 months, 1 year, 4.5 years) documents a significant main effect of time for both pleasant and unpleasant events, but it records significant speed and intensity differences consistent with the fading effect bias (Walker et al., 1997). Thus, while negative events command higher attention and receive more thorough cognitive processing than positive ones (Baumeister et al., 2001), coping mechanisms intervene over time to dampen the affective intensity, but not the factual precision of the memory (Walker et al., 2003).

We posit that triggered essential reviewing engenders a disproportion of opinions with a negative connotation (i.e., a negative bias). Individuals with access to mobile devices are more likely to write a review, and restore homeostasis by expressing their feelings, when mobilization occurs in reaction to a negative experience.

Because of the asymmetrical mitigation response to positive and negative events, we expect a general increase in evaluations over time – irrespective of the medium used to post them. However, we expect the negativity bias to linger over time, producing a time-device interaction. In other words, the negativity bias of mobile reviews is not fully explained by the timing of review posting (i.e., immediacy effect).

Hypothesis 4: There is a negative relationship between triggered essential reviewing and ratings of the experience.

Hypothesis 5: Time moderates the negative relationship between triggered essential reviewing and ratings of the experience.

3 Methodology

Our investigation is based on an archival research methodology using an exhaustive set of reviews from a major opinion platform. The original dataset comprises 293,295 opinions posted between January 1st and December 21st 2012, pertaining to the 25 most populous US cities – a total of 3686 hotels. From this dataset we extracted a matched sample of all reviews posted for the same hotel on the same day via the

mobile platform (30,540) and via the Web interface (38,248). For each review we had access to the ratings provided by the individual posting, title, commentary, as well as a number of other characteristics of the user who contributed the review (e.g., number of reviews posted). The review system requires users to produce a global rating of the experience (i.e., overall rating). It also encourages them to use finer grained rating measures (e.g., service, cleanliness, location). We focused our analysis on the overall and service dimensions. We chose to focus on service because it is the evaluation measure most related to the intangible aspects of the experience, a measure relatively neglected by research on opinion platforms. The measurement scale is a five-point ordinal scales ranging from *Terrible* (1) to *Excellent* (5). We computed review length on an interval scale as the number of characters in the body of the evaluation. We also collected control variables such as the total number of reviews an individual has contributed to the online review system (`author.num_reviews`) and the total number of positive votes each review attracted by readers who felt that the review was helpful (`num_helpful_votes`). We then analyzed the data with a mix of parametric and non-parametric techniques.

When posting an evaluation on the opinion platform users must identify the month in which they visited the property. Using this information we can compute the timing of the review relative to the service encounter by taking the time stamp of the review posting and the month in which the stay occurred. This information enables us to differentiate reviews contributed during the same month as the stay and those posted on a different month. However, it does not give us the ability to systematically identify reviews posted on the same day as the stay. Only reviews posted on the first day of the month in which the user stayed at the hotel can be reliably identified as same-day reviews – we label them *true same-day reviews*. We computed *predicted same-day reviews* with a supervised binary text classifier trained on the sample of 420 true same-day reviews versus those posted on the first day of the month for a stay occurring the previous month. We subsampled the available training data so that positive and negative classes were matched according to the hotel and overall rating score of the review (positive > 3 stars and negative rating otherwise). We employed a linear kernel Support Vector Machine classifier with unigram (bag-of-words) features. We tuned the cost parameter, C , and chose a classification threshold based on 5-fold

cross-validation experiments on the training data. In particular, we set the classification threshold to 0.25, corresponding to 73% precision and 12% recall in our cross-validation experiments. We then trained a new classifier on all of the training data and applied it to the full set of reviews posted in the same month as the stay (N=170,159). Analyzing the full set of reviews the classifier identified 18,262 *predicted same day* reviews that we combined with *true same day* reviews, for a total of 18,682 reviews. From this set we constructed the research sample by retaining those predicted same day reviews that had a match for the same hotel and same date across the two platforms.

For each opinion we also computed depth and breadth of reference to the five defining features of a hotel experience (i.e., service, value, location, room and food). Specifically, we employed probabilistic topic modeling (Blei, 2012) at the sentence level (Lu et al., 2011) to measure the aspects (i.e., elements) of the experience. After tokenizing and sentence splitting each review with the Stanford POS Tagger (Toutanova et al., 2003) we seeded the five topics with four terms each (e.g., Room: Room, Bed, Bathroom, Shower; Location: Location, Place, Area, View). A Local LDA algorithm (Lu et al. 2011) computed topic weights for each sentence. The weights were normalized to obtain theta probabilities for each aspect for each sentence. The topic with the largest weight (e.g., $\theta > 0.5$) for each sentence can be thought to represent the feature the sentence refers to. Sentences with no topic above the θ threshold were classified as “undefined.” Upon tagging each sentence with the feature it refers to, we computed two indices: depth and breadth. $Depth_j [0 : \infty)$ represents the extent to which an individual mentions any element of their experience in a review. It is the total number of sentences in the j^{th} review that are not classified as undefined. $Breadth_j [0 : 5]$ represents the total number of unique mentions of the five aspects of service in the j^{th} review. It is obtained by counting the number of features mentioned at least once in a review.

4 Analysis and Results

The notion of triggered essential reviewing predicts the increased production of reviews closer in time to the service encounter. This expectation was corroborated. We identify three time intervals of interest:

Same day as service, same month as service and different month. We detect significant differences in the timing of review contribution ($\chi^2 = 1519, p < .0001$) with triggered essential reviewing being 2.46 times more likely to occur on the same day than through web-based reviewing (Table 1). Conversely, reviews produced in the months following the service encounter are 1.38 times less likely to be associated with triggered essential reviewing. For those opinions contributed during the month of service, but not on the same day, the difference is marginal – albeit statistically significant – in favor of the mobile.

Table 1: Relative frequency of reviews by medium and time

Time Period	Relative Frequency			
	Web	Mobile	χ^2	<i>p</i> value
Same day	0.056	0.138	794.4	.000
Same month	0.560	0.585	24.7	.000
Different month	0.383	0.277	833.3	.000

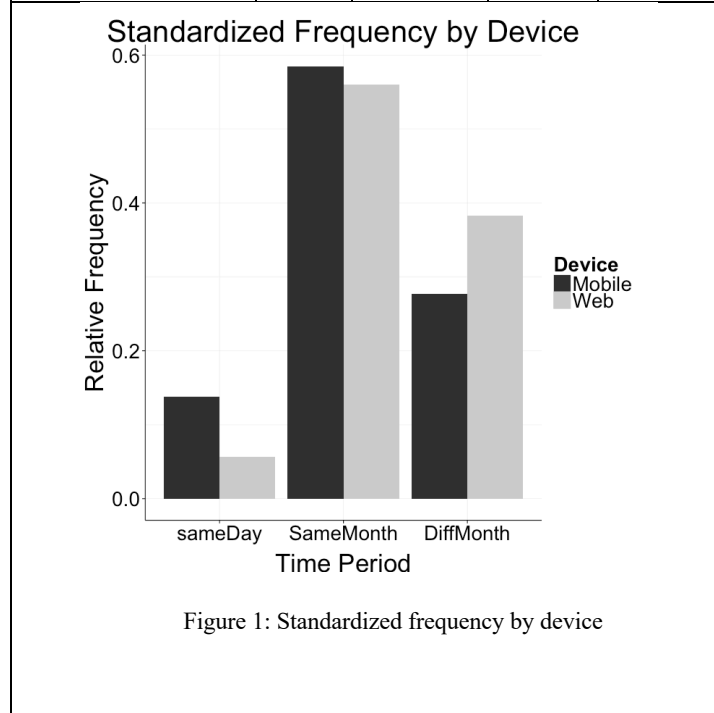


Figure 1: Standardized frequency by device

Our findings support hypothesis 2 and the notion that triggered essential reviewing results, on average, in shorter evaluations of the service experience. Specifically, opinions posted via mobile are significantly shorter than those posted through the web-based review system, with average evaluations of 543.4 and 790.1 characters long respectively. We formally tested the hypothesis using the following ordinary least square regression model:

$$\text{Log}[\text{Length}] = \beta_0 + \beta_1 \text{votes} + \beta_2 \text{overall_rating} + \beta_3 \text{service_rating} + \beta_4 \text{via_mobile} + \epsilon_i$$

where Length is expressed as the number of characters, votes represents the number of helpful votes, rating is the score using both the overall and service dimension and via_mobile is a dummy variable representing triggered essential reviewing. We treat overall and service rating as equally spaced ordered scales and estimate parameters for linear, quadratic and cubic trends in order to control for them. We find that triggered essential reviewing has a direct impact on length ($p < .0001$) and the model explains 13.3% of the variance in review length. The results show that, upon controlling for overall and service ratings, reviews written by way of the web-based review system contain about 41.3% more characters than those contributed through the mobile-enabled opinion platform (Table 2).

Table 2: Review length as a function of medium

Log(Length) _i		
Intercept	6.06344***	(0.00571)
votes	0.10343***	(0.002571)
ov_rating.L	-0.19046 ***	(0.015909)
ov_rating.Q	-0.16195***	(0.010757)
ov_rating.C	0.05934***	(0.009552)
ov_rating^4	0.00769	(0.008377)
sv_rating.L	-0.14702***	(0.015000)
sv_rating.Q	0.07905***	(0.010448)
sv_rating.C	0.05526***	(0.010090)
sv_rating^4	-0.02414**	(0.008871)
via_mobileWeb	0.41277***	(0.005774)
N	59,605	
R ²	13.3%	

Notes: Standard errors in parenthesis; *** $p < 0.001$ ** $p < 0.01$, coefficients for rating controls are omitted

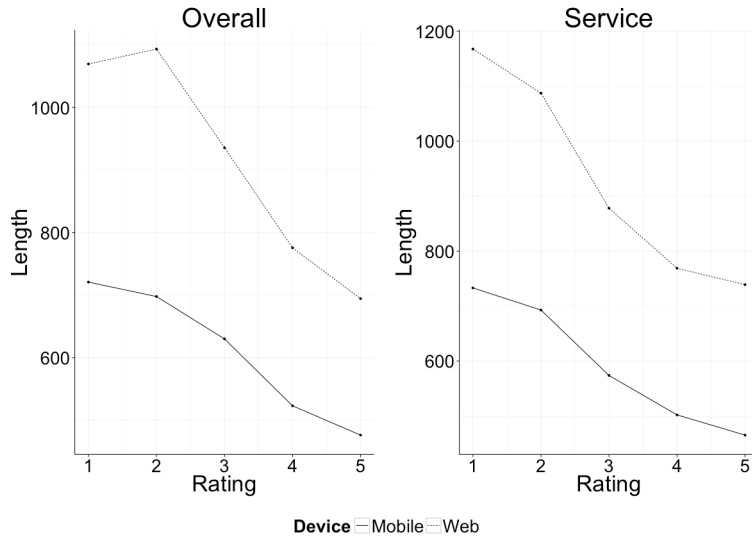


Figure 2: Average review length by medium (Rating: Terrible (1), Poor (2), Average (3), Very Good (4), Excellent (5))

We corroborate this analysis by explicitly controlling for the individual characteristics of each contributor. We standardized individual user differences by extracting the subset of opinions posted by individuals who used both opinion platforms at different times in 2012 (1933 opinions by 795 unique authors). We then used a random intercept model to estimate length differences.

$$\text{Log}[\text{Length}_{ij}] = \beta_0 + \beta_1 \text{votes}_{ij} + \beta_2 \text{overall_rating}_{ij} + \beta_3 \text{service_rating}_{ij} + \beta_4 \text{via_mobile}_{ij} + R_{ij}$$

$$\beta_{0j} = \gamma_{00} + \gamma_{01} \text{author}_j + U_{0j}$$

We find that the same individual, on average, writes 33.49% less text when engaging in triggered essential reviewing.

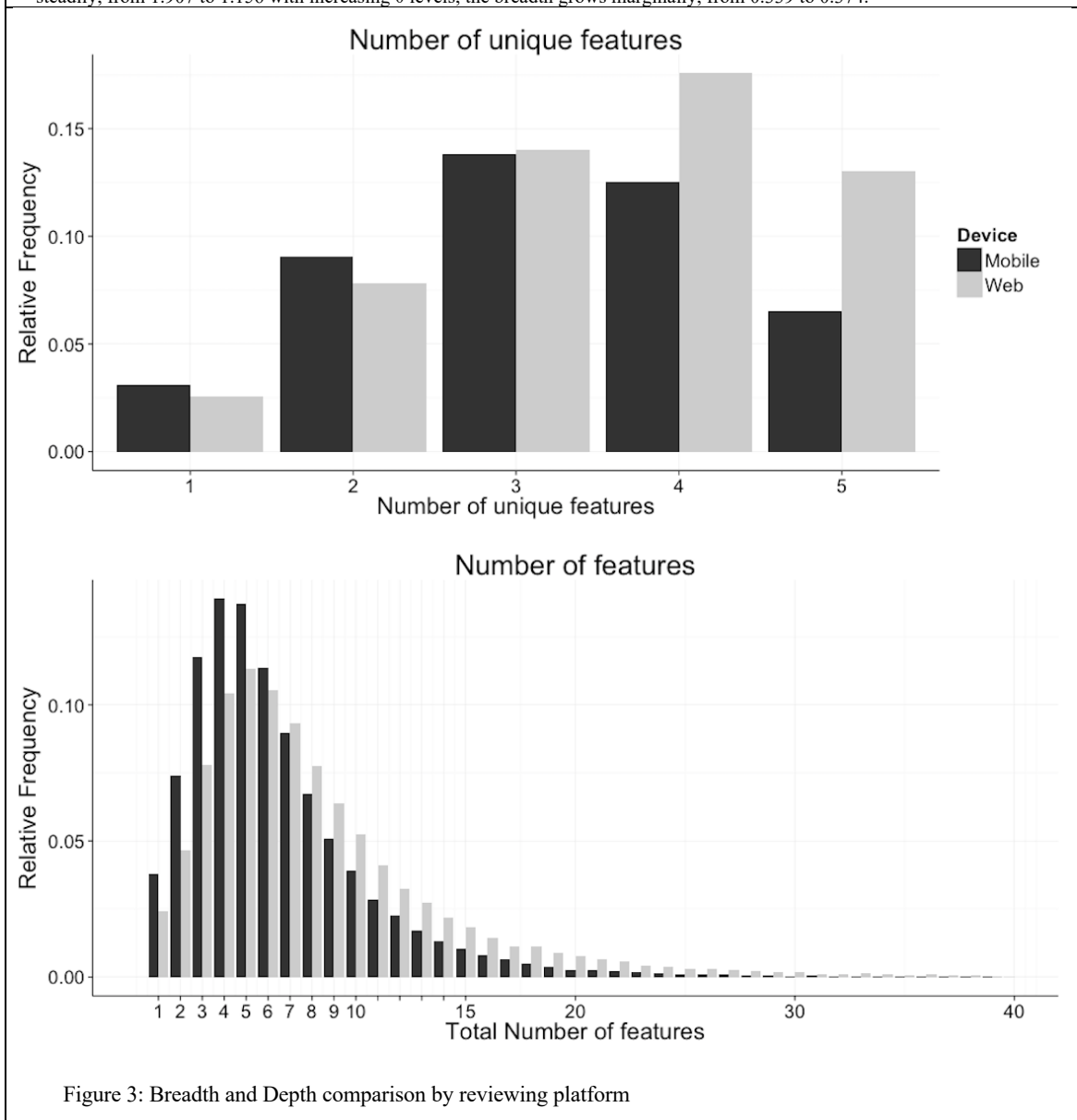
The notion of triggered essential reviewing implies that individuals not only produce less text when assessing their experience, but also that they communicate differently. Our findings support hypothesis 3. Both depth and breadth are significantly lower in the presence of the trigger essential reviewing affordance (Figure 3).

Table 3: Depth and Breadth of features discussed via Mobile and Web

Rating category	Mobile	Web	Δ	χ^2	p -value
Depth	6.496	8.403	1.907	1861.7	.000
Breadth	3.192	3.531	0.339	1305.8	.000

* $\theta > 0.5$

Results were robust to changes in threshold θ values. We re-ran the analysis with θ values ranging from 0.5 to 0.8 with no qualitative difference in findings as the mean difference remains significant in both depth and breadth. While depth narrows steadily, from 1.907 to 1.156 with increasing θ levels, the breadth grows marginally, from 0.339 to 0.374.



Note that, while these differences are related to the length of the message, they remain significant after controlling for the number of characters in the opinion and the length-device interaction ($p < 0.0001$).

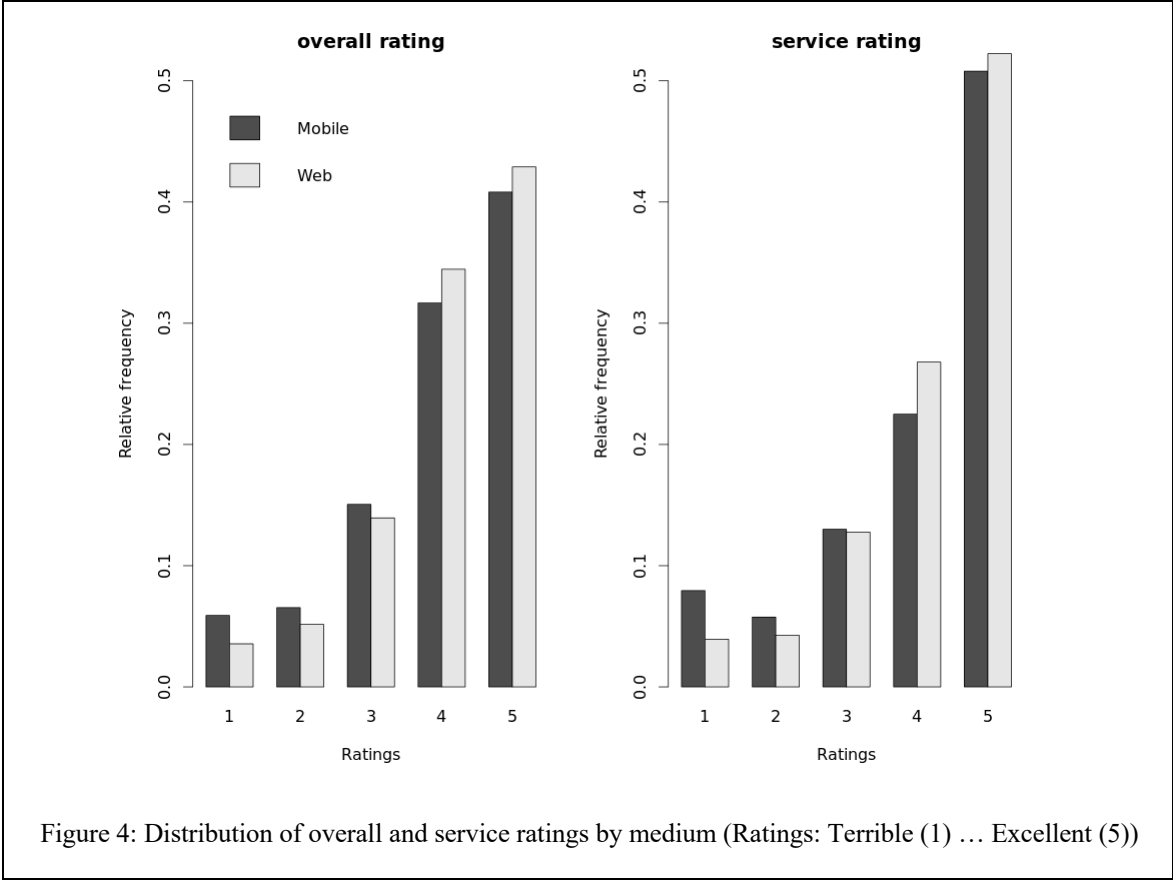
Specifically, triggered essential reviewing is associated with a 0.366 units decrease in breadth and a 19% decrease in depth (Table 3). In other words, as individuals elaborate their opinions, they tend to discuss more aspects of the experience (breadth) and they do so with greater attention to detail by devoting multiple sentences to the same element (depth). However, in the presence of triggered essential reviewing, regardless of length, individuals provide less emphasis about each feature they discuss and, more importantly, discuss significantly fewer elements of the experience.

Our remaining hypotheses pertain to the effect of triggered essential reviewing on the opinion themselves: their valence and affective polarity. We find support for hypothesis 4. Triggered essential reviewing engenders, on average, opinions that are both significantly more negative and more polarized (see Table 4) than those posted via the Web. These mean differences represent significant discrepancy in the distribution of evaluations by posting medium due to a greater relative occurrence of negative ratings and a lower relative occurrence of positive evaluations. Note that, while mean differences appear to be small, differences are compressed by the preponderance of high evaluations. A more telling metric is the difference in the relative occurrence of very negative evaluations (Figure 4). Specifically, individuals posting their commentary through the mobile platform select the worst rating (i.e., “Terrible”) proportionally 1.66 times more for *overall* and 2.02 times more when rating the *service*. For ratings of “Poor” the results are similar, albeit of lesser magnitude (1.27 and 1.35 times for overall and service ratings respectively).

Table 4: Mean and Standard Deviation by posting medium

Category	Mean				Standard Deviation			
	Web	Mobile	χ^2	<i>p</i> value	Web	Mobile	χ^2 [*]	<i>p</i> -value
Overall rating	4.08	3.95	331.0	.000	1.043	1.161	254.1	.000
Service rating	4.19	4.02	589.6	.000	1.067	1.258	244.5	.000

* Figner-Killeen test for homogeneity of variance



Our results also support hypothesis 5, indicating that the general negative bias associated with triggered essential reviewing is greater in the immediacy of the experience and mitigates over time (Figure 5).

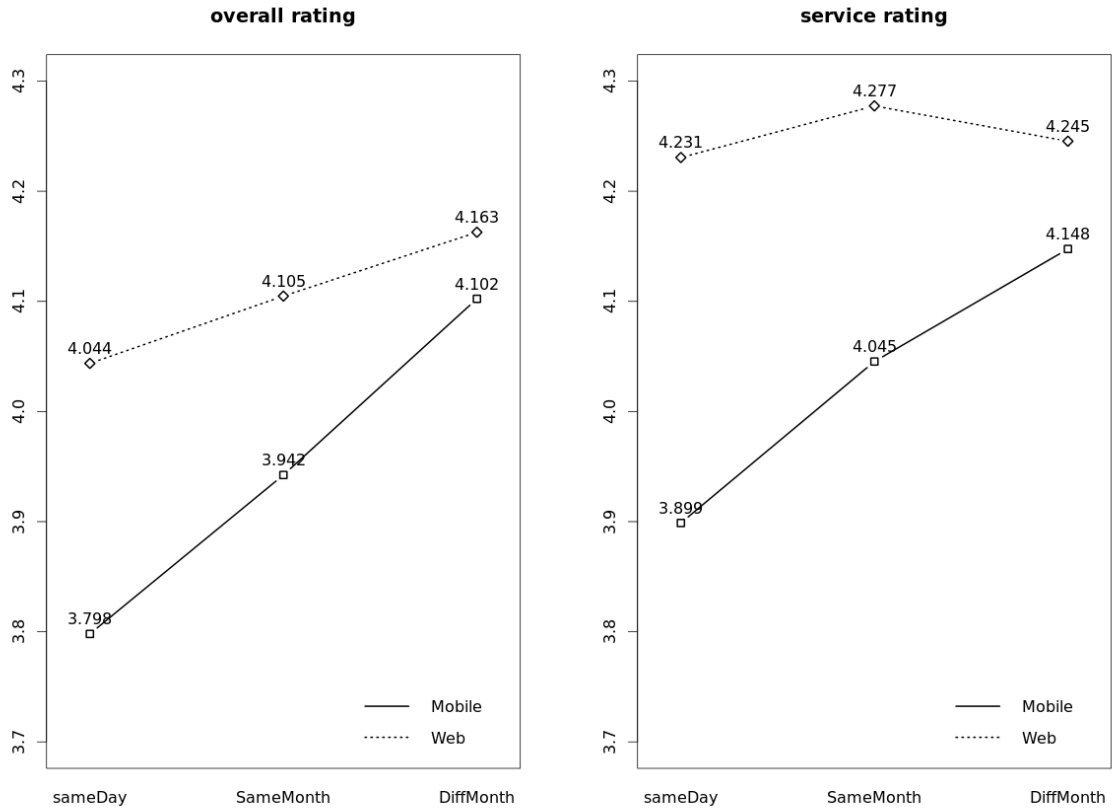


Figure 5: Interaction of time and medium for overall and service rating categories

We test the time-device interaction comparing two Cumulative Logit Models using package *Ordinal* in R (Christensen 2012). Since the proportional odds assumption is violated in our data, as the category thresholds θ_j are not constant across all J-levels, we treat the ratings as nominal rather than ordinal. Specifically, we compare the following two models:

$$\text{logit}(P(\text{Rating}_i \leq j)) = \theta_j - \beta_{1j} \text{via_mobile}_i + \beta_{2j} \text{month}_i + \beta_{3j} \text{via_mobile} \times \text{month}_i \quad [\text{clm1}]$$

$$\text{logit}(P(\text{Rating}_i \leq j)) = \theta_j - \beta_{1j} \text{via_mobile}_i + \beta_{2j} \text{month}_i \quad [\text{clm0}]$$

$i = 1, \dots, 57969; J = 1, \dots, 4$

Note that the above model does not require that the proportional odds assumption be fulfilled because it models the variability in the slopes of each (β) allowing them to vary with J. Both models have a

satisfactory condition number of the Hessian (0.062 and 0.0039 respectively). The likelihood ratio test supports the contention that the addition of the interaction term produces a significant improvement in model fit (Table 5)

Table 5: Mean and Standard Deviation by posting medium

Overall rating	model	parameter	AIC	logLik	LR	p value
	clm0	16	150635	-75301		
	clm1	24	150602	-75277	48.8	.000
Service rating	clm0	16	122377	-61172		
	clm1	24	122334	-61143	59.8	.000

We performed the above analysis using *predicted* same day reviews. While we were careful to estimate predicted same day reviews restrictively, we corroborate our analysis using the smaller sample of *true* same day reviews. Results of the general analysis are confirmed. The lower mean differences in rating for true same day reviews boost our confidence in the results of the general analysis (Table 6).

Table 6: Average rating by timing of posting via Mobile platform

Rating category	sameDay	sameMonth	diffMonth
Overall Mobile	3.597	3.899	4.079
Service Mobile	3.772	3.994	4.105

5 Discussion

This paper responds to the recent call for understanding the nature and consequences of the digital mediation of everyday experiences. We do so by adopting an affordance perspective in the context of online opinion sharing. Following recent calls for focusing on specific affordance and their outcomes rather than identifying generic affordances (Majchrzak and Markus, 2013), we advance a technology affordance called triggered essential reviewing. We find that triggered essential reviewing engenders opinions that are, on average, shorter in length and contributed closer in time to the event they refer to. We show that opinions cover a narrower range of aspects of the experience and that triggered essential

reviewing produces a negative evaluative bias – a bias that mitigates with the passing of time between the service experience and the writing of the review. Sharing one’s experiences and providing feedback to others (e.g., the community of travelers) is a basic human activity. Increasingly however, information sharing is a digitally mediated endeavor, experienced through a wide array of information technology designs. Thus, our findings contribute to the emerging literature on experiential computing, seeking to understand how technology “directly shapes and occasionally transforms our lived experiences” (Yoo, 2010, p. 218).

5.1 Characteristics of opinions

Our first finding validates the value of a “technology-shaping perspective” (Markus, 2005). Different technology designs do indeed produce a variation of effects around a central tendency. While intuitive this result is important for both research and practice. Systematic length and timing differences due to triggered essential reviewing draw attention to the need for focusing on technology design in experiential computing. We confirm that systematic and significant differences can stem probabilistically from the unique design of two different artifacts used to achieve the same general objective – sharing one’s evaluation of a service experience. Consistent with our findings, previous research shows how small differences in technology design (e.g., different application defaults) may lead to significant differences in patterns of usage over time (Palen and Grudin, 2002). However, there is no systematic work analyzing these dynamics in the context of experiential computing (Yoo, 2010) and the emerging class of “post-PC” devices (e.g., smartphones, wearable devices). We can imagine technology design features as akin to the initial states of an evolving system. While users engage in an appropriation process (DeSanctis and Poole, 1994), initial states can have powerful seeding effects leading to a central tendency of outcomes consistent with that initial state (Markus, 2005). This dynamic was shown recently in the context of social influence in metavoicing (Majchrzak et al., 2013), where seeding a comment with an up-vote resulted in a 32% increase in up-vote by the first actual reader and a 25% overall mean rating boost (Muchnik et al., 2013). Consistent with the affordance perspective we show that the same individuals exhibit different

behaviors at different times. This finding supports the notion that individuals perceive triggered essential reviewing and orient themselves toward the mobile platform when producing focused reviews in the immediacy of the event. Our main contribution consists in identifying the systematic differences but future research should delve deeper into the specific drivers that motivate individuals to orient themselves toward the different opinion sharing platforms at their disposal. For example, personality traits, a sense of responsibility toward others, external incentives or rewards, may all be motivators that interact with the different platforms. An example of this dynamic may stem from the users' desire for recognition by way of up-votes or helpfulness votes. While this further investigation was beyond the scope of our research, future work should test whether the search for recognition contributes to users' orientation toward competing platforms.

Systematically understanding how initial design states and the ensuing affordances correlate with outcomes is a fertile and valuable avenue for basic science in information systems. In the context of opinion platforms, for example, a greater focus on design would make explicit the contribution of much work that today offers only indirect implication for system design (e.g., Forman et al., 2008). Technology design may differ with respect to the presence of certain features (e.g., portability) or with different implementations of the same features (e.g., full size vs. virtual keyboard). Moreover, these differences would pertain to both hardware elements (e.g., portability and keyboards) as well as software design (e.g., addressability). In the context of our findings for example, while it is intuitively appealing to think that triggered essential reviewing will result in shorter reviews, it is much more difficult to provide definite answers as to why. Are reviews contributed via mobile on average shorter because of the constraints of the virtual keyboards? Is it because of the prevalence of extractive behaviors that encourage people to write reviews while "on-the-go," but with pressure on their time and attention? The first question may be investigated comparing the characteristics of opinions contributed via mobile devices equipped with virtual keyboards versus voice recognition software. The second would require the examination of different patterns and contexts of use. We find corroborating evidence for our proposition that triggering is stronger in the immediacy of the event.

5.2 Depth and breadth of opinions

Beyond identifying the impact of different technology designs on the central tendency of opinion characteristics (i.e., length and timing), our work focuses on the “entanglement between the human action and the technological capability as a unit of analysis” (Majchrzak et al., 2013, p. 39). We find that triggered essential reviewing narrows the scope of evaluative content generation in such a way as to filter out more nuanced or subdued elements. Specifically, it lowers the depth and breadth of the evaluation of an event. Depth is a proxy for the degree of precision and detail with which a person describes the various aspects of the experience. Breadth is a measure of the degree of focus of the evaluation (i.e., highly focused evaluations discuss fewer elements than broader opinions). While depth may be intuitively associated with length, there is no reason to expect breadth to be simply a function of the amount of text produced. It is indeed possible to provide a lot of information succinctly. However, it is a difficult task that requires attention and time, as famously observed by Blaise Pascal in one of his *Lettres Provinciales*: “I have made this [letter] longer than usual because I have not had time to make it shorter” (Shapiro, 2006, p. 583). We believe that our study is the first to document the narrowing effect of triggered essential reviewing on the mobile platform. This finding provides fertile ground for future investigation as scholars seek to understand how and why this narrowing effect occurs. Do individuals orient themselves toward technology with the intentionality of writing short and focused reviews already formulated? How would this process change as the technology continue to evolve toward smaller screens (e.g., smart watches) or voice-activated interfaces (e.g., the Amazon Echo)?

More fundamentally, the growing academic research on technology affordances has yet to uncover how they operate at the individual level. In theory, an affordance is a potential for action (Stoffregen, 2003) that is activated through an individual’s intentionality (Majchrzak and Markus, 2013). However, research on ubiquitous computing suggests that the most powerful technologies are those that fade into the periphery (Brown and Duguid, 1994) and disappear from view, at least at a conscious cognitive level (Weiser, 1991). In the language of affordance this means that people orient themselves to these functionalities without cognitively registering what they are doing. This view is at the heart of Gibson’s

original formulation of affordance (Gibson, 1977). Technology affordances, however, differ in a fundamental way from the affordances of physical objects. Thanks to the malleability of digital artifacts, technology affordances embed digital content and features in familiar physical objects, thereby changing their essence and the meaning of using them (Yoo, 2010). For example, while a typical stationary bike may afford “exercising,” a virtual reality trainer bicycle like the KGS Bike affords a completely different experience. Amongst its many virtual reality simulator functionalities (e.g., steering, climbing, drafting) it has recorded tracks and open roads that enable the rider to race (albeit virtually) on actual courses and legs of the most famous bicycle races (e.g., Alpe d’Huez at the Tour de France). As Google continues to map hiking trails with street-view equipment, a stationary bike may soon afford “touring Hawaii’s trails.” We are at the beginning of this transition. Thus, we have no knowledge of the process by which these ever-changing digital affordances emerge, are recognized and are enacted in everyday activities. More fundamentally, we have a limited understanding of the process by which humans orient themselves toward these digital artifacts.

5.3 Valence of opinions

The value of an affordance perspective is particularly evident in our analysis of the valence of opinions. We detected a significant, negative bias associated with triggered essential reviewing. Such bias is heightened by immediacy, with evaluations being more negative when posted closer to the service encounter. In the affordance perspective we are not concerned with attempting to separate the role of technology versus individuals in producing this result. Rather, we accept that the negative bias associated with triggered essential reviewing is a function of the individual-technology system. As such, it is not that the anytime-anywhere, always-on access to the community of users inherent in the technological design of the mobile platform “causes” more negative reviews. Rather we suggest that individuals orient themselves proportionally more toward the mobile platform when mobilization occurs in reaction to a negative experience. Beyond understanding the process by which people orient themselves to the device (discussed earlier), it is important to understand the nature of the negative bias. As we move further into

the experiential computing era, it will become central to understand how these elements combine to shape behavior. The negative bias we have uncovered suggests that technology design interacts with context, time and user intentions to depress the evaluation of the experience. The timing of writing of the opinion is partially responsible for this negative bias. However, differences in the distribution of ratings remain significant even when not contributed in the immediacy of the experience (Figure 6).

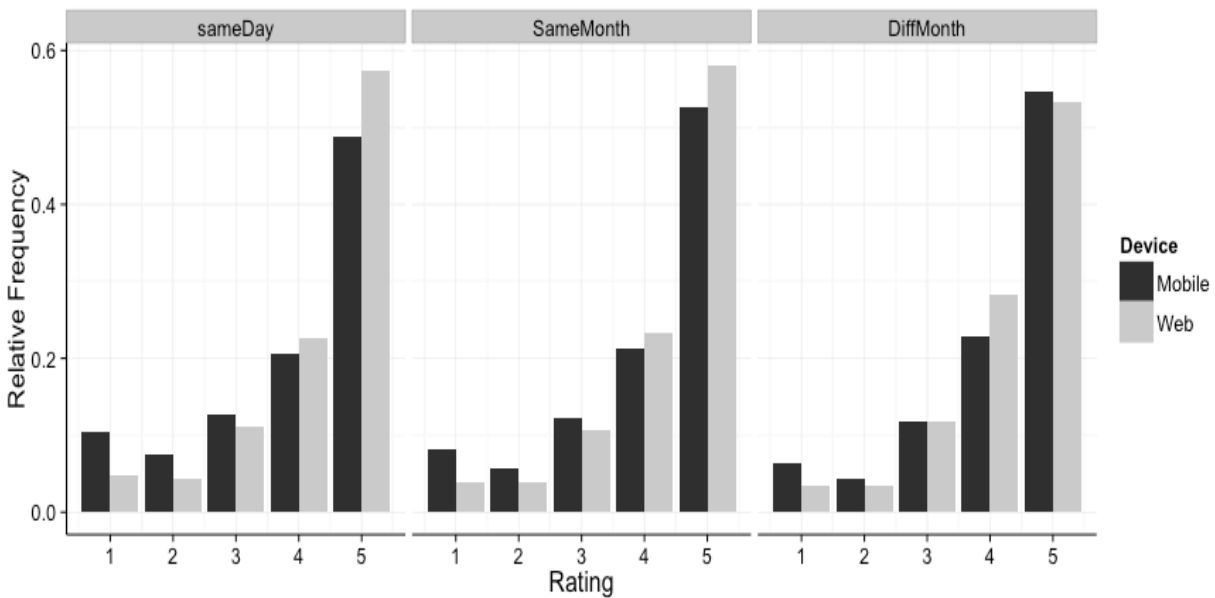


Figure 6: Distribution of service ratings (Terrible (1), ... Excellent (5)) by timing of review posting

Thus, we cannot conclude that our results are simply explained by an impulsive response in the face of a negative experience. Rather, we propose that the lingering negative bias associated with triggered essential reviewing (i.e., time-device interaction) stems from the “digital mediation” (Yoo, 2010) of opinion writing about a service. Triggered essential reviewing focuses the individual’s assessment with respect to the evaluative elements of the experience (hypothesis 3), as well as the emotional elements leading to reviews that are more polarized (hypothesis 4). In other words, triggered essential reviewing appears to hamper the reflection and balancing processes that occur in Web-based reviewing. This is consistent with previous research suggesting that the cognitive appraisal of a situation or event causes the

formulation of emotions about that event (Smith and Kirby, 2009). Our findings then suggest that the digital mediation of the appraisal that occurs in opinion platforms with different technology affordances contributes to the actual formulation of the emotion about the event that is captured in the published review.

These results, albeit preliminary, indicate that technology affordances of embodied digital experiences have an effect on the outcomes of the individual's experience itself. Complementing our work on the depth and breadth of features, research is needed to systematically examine the impact of triggered essential reviewing on the emotionality of reviews. For example, recent work has found systematic differences in the breadth and depth of discussion of six basic emotions when comparing reviews for hedonic and utilitarian goods (Madlberger and Nakayama, 2013). Focusing on the technology affordances of the opinion platform rather than the target of the review (e.g., hedonic goods) would directly inform system design and contribute to the nascent affordance literature.

6 Practical Implications

The effects of triggered essential reviewing on the characteristics of opinions and on their affective polarity uncovered in our work may be of interest to practicing managers. The impact of online reviews on purchasing behavior is significant and online opinions from previous customers are consistently amongst the top influencers of purchase decisions. Thus, recognizing the increasing shift to the mobile as an instrument of review production, it is critical for managers to proactively manage this transition. Clearly practitioners cannot stop individuals from using the device of their choice, however, our findings show the importance of allowing customers to voice their dissatisfaction. This means reinforcing customer service efforts and providing outlets for eliciting feedback prior to customer's departure. In the service industries (e.g., lodging, travel) this approach requires reversing the trend toward IT-enabled self-service and ensuring availability of staff. Moreover, it requires that staff be proactively seeking to identify dissatisfied customers and offer redress. Technology can also be part of the solution. The recent emergence of pervasive digital data streams (Pigni et al. 2016; Piccoli and Pigni, 2013) provides

opportunities for customer service initiatives built upon a proactive understanding of customer experiences. Because it is impossible to prevent customers from grabbing their mobile phone and providing a negative review after a bad experience, the solution lies in mitigating the need for individuals to vent online by enabling them to restore homeostasis before they resort to opinion platforms. In practice, this would consist of providing easy access to communication and redress during the service encounter and devise real-time customer service systems (Brohman et al., 2009).

For those reviews that have been posted, opinion platforms could provide a filter based on the device used to post the review. Our research demonstrates the existence of systematic differences between reviews posted via mobile and over the web. This finding suggests that it would be legitimate for opinion platforms to separate the two delivery channels, or at least provide the ability for users to filter based on channel. As diverse technology form factors emerge in the “post-PC” era (e.g., Microsoft HoloLens), pressure will mount to effectively manage the change. Managing the timing and the essential nature of reviews appears to be critical, leveraging the ability to respond and add to the permanent repository of user-generated opinions about the firm’s offerings. Developing response strategies that bring in more contextual nuance, perhaps seizing on the content provided by previous reviewers may be one fruitful approach.

7 Limitations and Conclusions

As with any archival research study, there are a number of limitations stemming from the availability of data. We utilize as outcome variables the ratings produced by users on the overall and service dimensions. These are single items measures. We did not have access to a precise time stamp for review posting. As a consequence, we had to estimate the timing of the review relative to the service encounter and could only produce categories (e.g., same-day reviews, same-month reviews). While our results still provide evidence of timing effects, future research should seek out data sources with more precise time stamps (e.g., day level), thus enabling the computation of an interval variable rather than having to rely on categorical groupings. Due to the archival nature of the dataset we could not independently survey those

individuals posting reviews about their perceptions. We recognize that triggered essential reviewing, which we associate with the mobile platform, may not be exclusive. As we mention earlier users may have their laptop with them or, if particularly responsive to a trigger (e.g., the experience), may seek out a connected computer and write their review immediately. Strictly speaking, this is a limitation of our design. However, aside from the fact that the occurrence of this phenomenon is likely limited, it actually should strengthen confidence in the results. Despite a limitation that should depress the difference between the two groups, we demonstrate the existence of a significant disparity consistent with a-priori expectations.

Research limitations notwithstanding, we believe our work makes important contributions to the application of affordance theory in Information Systems. First, it shows the importance of IT design in studying experiential computing. While not taking a deterministic view of technology, we validate the notion that different technology designs produce a variation of effects around a predictable central tendency. Second, it empirically demonstrates that the affordances of embodied digital experiences have an effect on actual behavior as well as on the outcome of the experience itself. Finally, our work draws attention to the value of the affordance perspective at the individual level of analysis, and to the need to expand beyond the current focus, which is almost exclusively on technology use in organizations (Treem and Leonardi, 2012). In Gibson's original formulation affordance is an instrument to understand individual behavior. Rediscovering this focus can be instrumental in improving our understanding of humans' increasingly digitally mediated everyday lived experiences.

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