

## **ABSTRACT**

**Title of dissertation:**           **INVESTIGATIONS OF FACTORS THAT  
AFFECT CONSUMERS' ONLINE WORD OF  
MOUTH BEHAVIOR**

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This dissertation includes two essays investigating factors that affect consumers' online word of mouth (WOM) behavior. The first essay studies how consumers as online posters make an online forum choice decision when they are motivated to influence other consumers. We propose that consumers have theories about effective word of mouth persuasion, acting as intuitive media planners in making online forum choices. Specifically, consumers possess audience beliefs (i.e. how loyal to the brand) and beliefs about effective persuasion (i.e. surprising and novel things are more impactful). Across three studies, we demonstrate that posters prefer posing positive messages on a brand-neutral forum (e.g., Digital Camera Forum) to a brand-specific (e.g., Nikon Forum) because positive brand information is not surprising to the later audience. However, when posting negative brand information, posters are equally likely to choose either forum since negative brand information is perceived as diagnostic and surprising

to all audience. We further offer a boundary condition in which the poster's primary motive is not to persuade and affect others but to affiliate with others. Under affiliation motive, message valence does not affect forum choice since posters are not considering message valence as a way to being impactful.

The second essay investigates the role of product rating scale in a product rating task, and how it can drive WOM behavior. We argue that rating scale can affect a rater's likelihood of engaging subsequent WOM behavior. Specifically, conducting three experiments, we show that participants' WOM intention are higher after evaluating their consumption experience on a 5-point rating scale than on a 2-point rating scale. We suggest that rating scales can affect a rater's certainty belief regarding the rating score assigned (i.e., high rating certainty leads to higher WOM intention). We further provide evidence that rating certainty mediates the impact of rating scale on WOM intention.

# **INVESTIGATIONS OF FACTORS THAT AFFECT CONSUMERS' ONLINE WORD OF MOUTH BEHAVIOR**

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## Chapter I: Introduction

The influence of word-of-mouth has been studied for decades (Arndt 1967). Research has shown that consumer-generated WOM, including face-to-face personal communication (Katz and Lazarsfeld 1955) and online communication such as product ratings or reviews (Chen and Xie 2008; Chevalier and Mayzlin 2006; Godes and Mayzlin 2004; Kozinets 2002; Moe and Trusov 2011), can attract consumers' attention, enhance product evaluation, provide interaction between consumers, and eventually increase product sales. However, researchers have spent relatively little effort in understanding how consumers as WOM providers make their WOM decision and how the WOM behavior affects consumers themselves. The goal in my dissertation is to broaden our understanding of WOM behavior by focusing on the consumers who provide WOM. In two essays, I study how consumers decide the avenues to talk on the Internet and how their behavior differs after sending WOM. Specifically, Chapter II examines how consumers make their decision about where to post their consumption experience on the Internet, given their persuasion goal. Chapter III studies how the process of assigning a product rating score on different rating scales can influence consumers' subsequent WOM behavior.

Chapter II examines how consumers decide *where* to post their consumption experience on the internet. We propose that consumers act as intuitive media planners, exercising persuasion knowledge in deciding where to post on an online discussion forum (a brand-specific forum such as Nikon forum vs. a brand-neutral forum such as camera forum). We suggest that, in the context of online posting, persuasion knowledge consists of beliefs about audience characteristics (e.g., audience's brand loyalty and attitude) and beliefs about effective persuasion (e.g., what information is more impactful). With these beliefs, posters' posting decision is affected by message valence. In three

studies in Chapter II, we find that message valence (negative or positive) affects posting choice because positive/negative posts have distinct effects on the two forums. That is, negative brand information is expected to be impactful on both forums, but positive brand information is expected to have more impact on a brand-neutral forum. These predicted results assume that consumers have an influence motive such that being impactful is important, and have audience beliefs (such that two groups of audience have distinct knowledge, interest, loyalty toward the brand information). Therefore, a boundary condition might exist when consumers have a non-influence motive such as affiliation motive (study 2), since being impactful is not the primary posting motive anymore.

Chapter III investigates the effect of product rating scales (e.g., 2-pt vs. 5-pt) on post-rating WOM intention and behavior. We suggest that during a product rating task, consumers have distinct certainty beliefs about the rating score they assign. We refer such a certainty belief as *rating certainty*, which can be affected by rating scales. Rating certainty, like other general certainty belief, can be an antecedents of behavior which is associated with the belief (e.g., attitude certainty can predict attitude associated behaviors). Therefore, we predict and show that as rating certainty increases, the intention towards a rating-associated behavior such as sharing the consumption experience with friends is likely to be greater. In four studies, we find that raters show higher rating certainty when rating on a 5-pt scale than on a 2-pt scale. Consequently, a 5-pt product rating scale, compared to a 2-pt scale, indeed leads to a higher WOM intention after the rating task. Based on the idea of rating certainty, we encourage marketers to rethink ways to enhance raters' confidence feeling during a product rating task in order to generate future WOM.

## **Chapter II:**

### **Posting Strategically: The Consumer As An Online Media Planner**

Yu-Jen Chen and Amna Kirmani

Imagine that Jeremy recently purchased a new Nikon camera and had a bad experience after a few weeks. He was so disappointed at the camera's performance that he decided to post a negative review on an online camera discussion forum where he was a registered member. On which sub-forum would he be more likely to post, a forum dedicated to Nikon cameras or one in which all brands of cameras are discussed? Now suppose that Jeremy had had a good experience with the camera. Would his forum choice differ?

As this example reveals, the internet makes ordinary consumers marketing agents. Consumers can shape others' opinions about a product or service by posting a review, discussing product features, and sharing product information. Prior to posting product-related information, however, consumers must decide what information to share (i.e., how to construct a message) as well as with whom to share (i.e., the target audience). Although both these decisions are important, the literature on online word-of-mouth (WOM) has focused on *what* people say (Chevalier & Mayzlin, 2006; Liu, 2006; Moe & Schweidel, 2012; Ward & Ostrom, 2006) rather than with *whom* they communicate. For instance, Schlosser (2005) finds that the product reviews of posters become more negative after posters read someone else's negative review, and Mathwick, Wiertz & de Ruyter (2008) show that website norms of reciprocity and volunteerism guide message content. However, we know little about how online posters decide which audience (and hence forum) to target with their message. In the introductory example, for instance, Jeremy could post his review on a forum with a brand-loyal audience or a forum with a more diverse audience.

In this paper, we investigate how consumers select communication targets when posting consumption experience online. We examine the context of posters who must decide which forum to select when posting their consumption experience on an online discussion forum.

Online discussion forums are frequented by individuals interested in a particular topic (e.g., digital photography) or brand (e.g., Nikon), and attract them to share or seek product information and share knowledge. Within an online discussion forum, posters can choose among a variety of forums, some of which may be targeted to consumers interested in and loyal to specific brands (e.g., Nikon Talk), while others are targeted at a more diverse audience (e.g., Open Talk). We suggest that consumers behave as intuitive media planners, using persuasion knowledge (Friestad and Wright 1994) to determine on which forum to post a message.

Persuasion knowledge refers to consumers' beliefs and intuitive theories about persuasion (Friestad and Wright 1994). Although research on persuasion knowledge has typically taken the perspective of consumers as targets of a persuasion attempt (Campbell and Kirmani 2000), consumers can also engage in the production of persuasion, moving between the roles of persuasion target and influence agent (Friestad and Wright 1994). As influence agents, consumers use a variety of strategies to persuade the marketing agent to help achieve consumers' purchase goals (Kirmani and Campbell 2004). Thus, consumers have knowledge about coping with the persuasion attempts of others as well as knowledge about the tactics and strategies needed to effectively influence others.

We propose that consumers' persuasion knowledge about online posting consists of two aspects: beliefs about forums' audiences and beliefs about a post's ability to persuade. Audience beliefs refer to the theories consumers have about the target audience's brand knowledge and loyalty. Research in interpersonal communication suggests that communicators take into account their audience's knowledge when crafting messages (Krause and Fussell 1991); moreover, in an online context, posters have been shown to adjust their messages to the audience (Schlosser 2005). This suggests that posters are likely to have beliefs about the characteristics of the

audience they are targeting and that they incorporate these beliefs into the decision of where to post.

Besides beliefs about the audience's brand loyalty, we propose that posters have beliefs about effective persuasion. In assessing lay theories of television advertising, Friestad and Wright (1995) found that consumers think that effective advertising depends on the ability of messages to gain attention, generate interest and evoke emotion. Analogously, both awareness and persuasibility are likely to be important in producing effective word of mouth. Therefore, we propose that a poster will evaluate the effectiveness of a persuasion attempt based on its ability to get attention and convince others.

Audience beliefs as well as beliefs about effective persuasion determine where posters will place their messages. Consider the situation in which posters must decide whether to target a brand loyal audience or a more diverse audience. We propose that posters will assess the extent to which their message may be effective for each audience and that this assessment will depend on message content. Message valence is one of the most investigated content variables in online word of mouth (Godes and Silva 2011; Moe and Schweidel; Schlosser 2005). In general, research shows that positive information is more expected and thus less salient and diagnostic than negative information is (Erber and Fiske 1994; Fiske 1993; Herr, Kardes, and Kim 1991). Since a brand loyal audience already likes the brand, a positive message is unlikely to affect their opinions. Therefore, posters may feel that a positive message is better targeted to a more diverse, less loyal audience, whose opinions are more malleable.

In contrast, because negative messages are perceived as diagnostic, salient, and useful (Herr, Kardes, and Kim 1991; Skowronski and Carlston 1987), posting an opinion that is considered negative may benefit readers on both forums. This would suggest that negative

messages should be targeted at both a brand loyal and a less brand loyal audience.

We examine a condition under which message valence will not affect where a message is posted: affiliation motive. We consider affiliation motive a special type of persuasion (e.g., to get others to become friends with the poster; Rule, Bisanz and Kohn 1985). However, affiliation-motivated posters are interested in building relationships with others on the forum; therefore, they may focus on the similarity of the audience to themselves rather than the usefulness of the message. Thus, the process of persuasion does not emphasize on offering useful or diagnostic brand information, but on identifying people who are similar to them or a community where they belong to. In this case, whom they are communicating with, instead of what they are posting, may play the major role in affecting their posting behavior. Consequently, message valence may not affect their forum choice.

In the next section, we examine the PKM in greater detail and develop the hypotheses. We test the hypotheses with three lab studies. We conclude with a consideration of contributions and implications for theory and practice.

## **Conceptual Framework**

According to the Persuasion Knowledge Model (Friestad and Wright 1994), consumers move between the role of influencer and influence target in their daily lives, sometimes trying to achieve their persuasion-related goals and at other times trying to guard against marketers' persuasion attempts (Kirmani and Campbell 2004). To cope with persuasion attempts, consumers use their persuasion knowledge, which consists of beliefs about persuasion motives, tactics, and mediators (Friestad and Wright 1994). Researchers have investigated persuasion knowledge in a

variety of offline contexts, such as television advertising (Friestad and Wright 1995), salesperson interactions (Campbell and Kirmani 2000), educational placements (Pechmann and Wang 2010), and corporate sponsorship (Menon and Kahn 2003). More recently, some literature examines persuasion knowledge in an online context, suggesting that consumers act strategically in their online behavior (Kozinets, de Valck, Wojnicki, & Wilner, 2010; Moe & Schweidel, 2011). For instance, Godes and Mayzlin (2009) suggest that well-informed consumers may use persuasion knowledge to discount firm-created messages, leading to lower willingness to spread WOM. Kozinets, de Valck, Wojnicki, & Wilner (2010) find that online bloggers strategically determine whether to reveal that they have received free products from companies, tailoring their messages so that the audience responds positively to their selling role. Similarly, Moe & Schweidel (2011) find that frequent posters attempt to make their reviews more attention-getting by differentiating their reviews from existing ones.

In these cases, the emphasis is on changing message content to persuade others. We extend the work on online persuasion knowledge by suggesting that online posters also use persuasion knowledge to determine where to post. We investigate the context in which posters have the desire to influence others, i.e., get others to do something (Rule, Bisanz and Kohn 1985). An influence goal is the primary goal in interpersonal persuasion, guiding how people plan and structure interactions (Schrader and Dillard 1998). In the interpersonal persuasion context, influence is typically seen in terms of gaining compliance. In our context, an influence goal would mean that posters want to change people's opinions or behaviors related to products, services or ideas. Importantly, an influence goal is different from other types of persuasion goals, such as building relationships (Rule, Bisanz and Kohn 1985) or self-presentation (Schlosser 2005).

We suggest that a strategic poster who wants to influence others is likely to have several beliefs or intuitive theories about posting on an online forum. We consider two types of beliefs: 1) theories about the audience of different forums, such as the audience's brand loyalty ; and 2) theories about effective persuasion. We discuss each of these next.

### Audience Beliefs

Given the amount of time people spend online, they are likely to have theories about the types of individuals that frequent different forums or websites, including the audience's level of brand interest, loyalty, and attitude. Research shows that online consumers have ideas about the nature of the audience. For instance, Schau and Gilly (2003) find that consumers strategically self-present online by creating digital identities and targeting personal websites to different audiences, such as family and friends. Similarly, communicators target messages to different audiences based on their theories about the attitudes and interests of the audience (Krause and Fussell 1991; Higgins 1992). These forms of targeting suggest that posters might have intuitive theories about the readers of different forums.

In particular, consumers of online forums are likely to realize that most readers of brand-specific forums, such as Nikon Talk, are likely to be brand loyal. They are likely to be highly interested in the target brand and its offerings across a variety of product categories; and they may be frequent brand purchasers. As such, the readers on brand forums may be perceived as biased. In contrast, visitors of more general forums (e.g., Open Talk) are likely to have more diverse product-related interests; they may have positive attitudes toward multiple brands or may be loyal to different brands. Thus, they are a less brand loyal audience and are likely to be perceived as less biased. It is worth noting that loyal consumers do not necessarily mean high

product category knowledge. For example, an everyday Starbucks coffee drinker could show high Starbucks loyalty but have little knowledge about coffee. However, it is likely that loyal consumers are more familiar with the brand because they are consistently aware of brand information (Godes and Mayzlin 2009). We argue that posters have knowledge about these audience characteristics and take them into account when choosing on which forum to post. .

### Beliefs About Effective Persuasion

The PKM asserts that consumers have intuitive theories about effective persuasion. In measuring lay theories about television advertising, Friestad and Wright (1995) found that consumers believe that capturing attention, generating interest, and evoking emotion are important mediators of effective advertising. Similarly, Hamilton (2003) demonstrated that people understand the importance to leverage context effects in offering a choice context to effectively influence others' choice. For instance, she found that participants who were asked to influence others' choice by presenting three of the given five grills, they were more likely to adopt either a contrast strategy (e.g., make the target alternative dominates the two chosen alternatives) or a compromise strategy (e.g., make the target alternative a compromise between the other two chosen alternatives). In an online context, Godes and Mayzlin (2009) suggest that effective WOM depends on how the message impacts consumer awareness and preference. In addition, Moe and Schweidel (2012) found that whether posters will engage in a posting behavior depends on what information has been shared on the website. Take together, we argue that posting decision relies on one's audience beliefs as well as beliefs about effective persuasion. post.

Audience beliefs and beliefs about effective persuasion determine where posters will place their messages. According to audience beliefs, readers on a brand-specific forum have a well-established preference toward the target brand and are biased, but readers on a brand-neutral forum are more likely to be affected. Therefore, when posting is to influence others, posters are expected to choose a brand-neutral forums. However, because posters have to assess the extent to which a message would be effective in persuading different audiences, the *content of the post* becomes important as well. One of the most researched aspect of content is message valence, which refers to the positivity or negativity of the message (Moe and Schweidel 2011; Schlosser 2005). Posters may write positive or negative reviews of a product, based on product satisfaction (Anderson 1998), the presence of other reviews on the website (Moe and Schweidel 2012), or self-presentation (Schlosser 2005). Research shows that most online reviews tend to be positive, making online word of mouth different from offline (Chevalier and Mayzlin 2005).<sup>1</sup>

We suggest that message valence can affect where consumers post when they take effective persuasion beliefs into account (e.g., have an influence motive). Specifically, depending on message valence, influence motivated posters may find their posts more effective in affecting other consumers on one forum than the other. First, from a message valence perspective, positive brand information might be perceived as more useful on brand-neutral forum than on a brand-specific forum since readers on a brand-specific forum are likely to be brand experts (McAlexander, Schouten, and Koenig 2002). In contrast, negative brand information could be useful on both forums because usually little negative information is available (Fiske 1980; Herr, Kardes, and Kim 1991). Second, research on WOM suggests that people like to share interesting and novel things (Berger and Milkman 2012; Berger and Iyengar 2013). That is, posters may

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<sup>1</sup> We also acknowledge the research work about dynamic perspective on the product ratings which suggests that ratings tend to become less positive in the long term (Li and Hitt 2008, Godes and Silva (2012), Moe and Trusov 2011). This paper adopts a static view that focuses mainly on the overall message valence on forums.

choose a forum where their posts are perceived as novel. Since a brand-specific forum is likely to be occupied by positive brand information, adding positive brand information is not novel nor surprising. So, posters will choose a brand-neutral forum. Again, negative brand information is rare and tends to be novel, therefore, it will suit both a brand-specific and a brand-neutral forum. This leads to the following hypothesis:

**H1a:** Under an influence motive, posters are *less likely* to post positive messages to forums with more loyal target brand users.

**H1b:** Under an influence motive, posters are equally likely to post negative messages to forums with more or less loyal target brand users.

#### Conditional Moderator

If beliefs about effective persuasion underlie our predication, conditions under which posters do not take effective persuasion into account should show a different posting pattern. That is, message valence will not determine forum choice. We suggest that posters with an affiliation motive will be unaffected by message valence.

An affiliation motive, whereby people have the desire to build up or maintain positive relationships with others, is a common motive in online communication (Hennig-Thurau et al 2004; Kozinets et al. 2010; Mathwick et al 2008). In building relationships, people seek to reach out to similar others to whom they feel they belong. For example, people with similar brand interest find themselves more connected with the brand community and they are likely to share communal norms and values (McAlexander, Schouten, and Koenig 2002; Muniz and O'Guinn

2001). However, this does not mean only positive aspect of a brand will be accepted by the brand community members. As McAlexander et al. (2002) pointed out, "brand community members feel that the brand belongs to them as much as it does to the manufacture.....They can be, and frequently are, critical of various aspects of the brand and /or its management." This will suggest that as long as affiliation motivated consumers identify a particular group/community to which they belong, they will choose to share information within that group. In other words, affiliation motivated posters still rely on persuasion knowledge and have beliefs about audience to infer audience characteristics and beliefs about effective persuasion to infer whether they can successfully build up relationship. However, valence does not play a role in guiding their forum choice decision since the focus is to identify similar others rather than the post content. Thus,

**H2:** There is an interaction effect between poster motive (influence vs. affiliation) and message valence such that valence will affect posting when primary motive is to influence others but not when primary motive is to affiliate with others.

## **Overview of Studies**

The conceptual framework is tested in three studies. We begin with an online forum study as an exploratory study intended to assess persuasion knowledge on an actual online discussion forum. Next, we conduct a pretest that examines consumers' lay theories about the two types of forums to demonstrate that people perceive a brand-specific forum as having high target brand loyalty readers and more positive target brand messages, compared to a brand-neutral forum. The three main studies test the hypotheses. The key dependent measures across the three studies are a

discrete choice measure as well as a continuous preference measure. Study 1 tests H1, the main effect of message valence under an influence motive, using different operationalizations of influence. Study 2 shows moderation by including both influence and affiliation motives. Study 3 explores the source of audience beliefs on consumers' inferences about two forums by varying the provided forum information, and replicates the main findings in Study 1 and 2.

### **Online Forum Study**

The online forum study is an exploratory study that examines actual poster behavior to determine whether consumers have persuasion knowledge about where to post as well as their motives for posting. Specifically, we examine the relationship among posters' motive (why they post), message valence (what they post), and forum type (where they post). The online discussion forum, Digital Photography Review (dpreview.com), was used. It is for camera enthusiasts, and has many posters and readers who are highly knowledgeable about photography. We consider dpreview.com a good example for our research purpose because it consists of several different sub-forums based on topics of interests (e.g., Nikon Talk, Canon Talk, Open Talk). Some of these forums focus on specific brands and models (e.g., Canon Talk, Nikon Talk, Nikon D90 Talk), and others are more relevant to consumers with a variety of interests about digital cameras (e.g., Open Talk, Beginners Questions).

### **Data on Digital Photography Review**

During the period of July 2011 and October 2011, we collected 276 posts/threads from 10

different forums on dpreview.com; seven were brand-specific forums (e.g., Nikon Talk, Nikon D90 Talk, Sony Talk) and three were brand-neutral forums (e.g., Beginners Questions, Open Talk, and News Discussion Forum). To qualify, the threads had to be related to brands; they should focus either on one particular camera model or on a comparison of different brands; and they needed to be initiated by a US poster. Since the primary purpose of the research is to understand how posters choose which audience to target when initiating a post, we analyzed the initial post in each thread. The posters who initiated the threads had an average of 3.25 years of membership on the website (ranges from 1 month to 13.9 years) and posters from brand-specific forums showed a longer membership than those from brand-neutral forums ( $M_{\text{specific}} = 702$  days,  $M_{\text{neutral}} = 469$ ,  $p < .03$ ). The average length of the post was 105 words, with a mean number of 9.5 replies and post length are not significantly different between the two types of forum ( $M_{\text{specific}} = 110$  words,  $M_{\text{neutral}} = 106$ ,  $p > .77$ ).

**Post Coding.** In order to assess the extent of persuasion, we developed a protocol-coding scheme to code message valence and classify the posts into four different content categories: information seeking, information sharing, topic generation, and direct influence. These categories represent different underlying motivations for posting. While information sharing is associated with an affiliation motive, the other three could reflect influence motives (as described below). Two independent judges evaluated each post in terms of its (a) posting motivation, and (2) message valence. All posts fit at least one of these categories, while some posts fit more than one category. Interjudge reliability was measured using Cohen's kappa and four kappas range from 0.60 to 0.90. Message valences were coded as positive ( $n = 76$ ), negative ( $n = 34$ ), or neutral ( $n = 166$ ), and interjudge reliability was 0.66. Disagreement were resolved through

discussion. Please see table 1 for definitions and examples.

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Table 1 about here

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## Results

**Categories Reflecting Motives.** We inferred underlying motives from the content of the post, finding evidence for both persuasion and affiliation motives. The largest content category was information seeking, which reflects posters' asking a question, seeking advice, or asking for help. Around 65% (181 out of 276) of the posts could be classified as information seeking. Information seeking is a common goal of persuasion (Rule, Bisanz and Kohn 1985), and asking is a common persuasion tactic. Many of the posts in this category involved getting others to answer one's inquiry. The poster must consider both how to phrase the request as well as which forum to select in order to get the best answer. Although these posts involved persuasion, it is likely that the posters did not think of themselves as persuading, since they were asking information. In this category, 22 posts were coded as positive, 23 posts were negative, and 136 posts were neutral.

The next largest category was information sharing, which reflects posters' sharing their experiences, photos, or advice, and accounted for 29% of the posts (80 out of 276). This category is likely, however, to involve an affiliation motive, since sharing is a form of affiliation that "links us to other people" (Belk 2010). In this category, 51 posts were coded as positive, 10 posts were negative, and 19 posts were neutral.

The third category, topic generation, reflects posters' offering an opinion or trying to get

people to discuss a topic, such as comparing two camera models. About 18% of the posts (49 out of 276) fell into this category. Topic generation involves persuasion, since posters are interested in getting people to talk about a topic relevant to the poster. In order to start a discussion, the poster must figure out how to create interest and which forum would best get attention. In this category, 5 posts were coded as positive, 6 posts were negative, and 38 posts were neutral.

The last category, direct influence, reflects an attempt to persuade someone to do something (e.g., buy a camera, take an action) or think a certain way, (e.g., affect an opinion about a camera model). These are both common persuasion goals (Rule et al. 1985). About 12% of the posts (34 out of 276) were classified as direct influence. Persuasion is most evident under direct influence, since posters are explicitly trying to get someone (e.g., other readers, a company) to do something. In this category, 19 posts were coded as positive, 5 posts were negative, and 10 posts were neutral.

In short, posts reflecting influence motives accounted for about 30% of posts, while those reflecting affiliation motives accounted for another 29%. The information seeking category (65%) could reflect a variety of underlying motives. In the subsequent analyses, we will treat direct influence and topic generation as having an influence motive, and information sharing as having an affiliation motive.

**Post Categories vs. Forum Type.** Next, we examined whether the posts in these four categories differed in terms of whether they appeared in a brand-specific forum or a brand-neutral forum. Since all posts involved a brand and seven of the ten forums in the sample were brand-specific forums, we would expect posts to be more likely to appear on a brand-specific forum. In fact, 65% of the posts appeared on a brand-specific forum, while 35%

appeared on a brand-neutral forum.

More interestingly, we investigated whether the classification of posts was related to the type of forum. Posts classified as topic generation or direct influence followed the overall average, with 65% on the brand-specific forum and 35% appearing on the brand-neutral forums. In contrast, the overwhelming majority of information sharing posts were likely to appear on a brand-specific forum than a brand-neutral forum (86% vs. 14%). Finally, information seeking posts were the most evenly distributed, with 55% appearing on brand-specific forums, and 45% on brand-neutral forums. Pairwise comparison showed that the tendency to post on the brand-specific forum was significantly higher in the information sharing category than in the other three categories ( $\chi^2(1) = 20.0, p < .001$ ). That is, when the post is to share product information, rather than to seek information, to generate discussion, or to influence others directly, the post is more likely to be found on a brand-specific forum. Since information sharing is a form of affiliation, this suggests that affiliation is more likely to occur on brand-specific forums than on brand-neutral forums. Posters can find others with similar brand interests in these forums. In contrast, the more influence-oriented posts are comparatively more likely to appear on the brand-neutral forum.

**Message Valence vs. Forum Type.** Finally, we examined the relationship between message valence and forum type under different post categories. Overall, 76 posts were coded as positive, 34 posts as negative, and 166 posts as neutral. Among the 76 positive posts, 61 of them (80%) were on the brand-specific forum and 15 of them (20%) were on the brand-neutral forum. Similarly, 28 of the negative posts (82%) were posted on the brand-specific forum and 8 of them

(18%) were posted on the brand-neutral forum. This seems to suggest that message valence is independent of forum choice.

Next, in an exploratory manner, we assessed the effects of inferred poster motivation on the above valence-forum relationship. First, when posters had an influence motive (i.e., the categories of topic generation and direct influence), 29% of the 24 positive posts appeared on the brand-general forum, while only 18% of the 11 negative posts were posted on the brand-general forum. The direction is consistent with the prediction that posters with an influence motive are more likely to post positive information, compared to post negative information, on a brand-neutral forum.

Second, when posters have an affiliation motive (e.g, information sharing), we found that 8% of the 51 positive posts appeared on the brand-general forum, and about the same portion of the 11 negative posts (9%) appeared on the brand-general forum. The result seems to suggest that message valence does not affect forum choice when posters have an affiliation motive. Finally, when the posts belong to information seeking category, 36% of the 22 positive posts were on the brand- general forum, and only 17% of the 23 negative posts were on the brand-general forum. If we consider information seeking a type of persuasion tactic with an influence motive, then this result is consistent with the results from direct influence and topic generation categories.

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Table 2 about here

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## **Online Survey Data**

To further understand posting behavior, we invited the posters to participate in an online survey. The goal was to understand posters' rationale for choosing a particular forum. Of the 276 posters, 34 (12.3%) agreed to respond. These respondents were more experienced posters than the non-respondents. They wrote longer posts (144 words vs. 99 words for non-respondents,  $p < .04$ ); received more replies per post (17.4 vs. 8.6,  $p < .001$ ); and had been members longer significantly (1985 days vs. 1115 days,  $p < .001$ ). So, although not a representative sample, this group does allow us to determine the persuasion knowledge of highly involved and experienced posters.

We asked several questions about posting motives on seven-point scales (e.g., "How often do you post on dpreview.com because you want to help others make a better decision about a topic or camera?" 1 = not at all, 7 = very much). The most frequent motive was sharing experience ( $M = 4.64$ ); followed by helping others ( $M = 4.15$ ); and affecting how others think about a topic ( $M = 3.55$ ). The least frequent motive was creating controversy ( $M = 1.61$ ). All pairwise comparisons are significantly different ( $ps < .001$ ). This shows that posters tend to see themselves in more normatively acceptable ways (i.e., sharing, helping) than as persuading. This is in contradiction to the classification of posts, which revealed a high frequency of persuasion.

In response to an open-ended question about why they chose that specific forum, posters indicated that forum choice was based on three major considerations (not mutually exclusive): 1) audience beliefs, i.e., the appropriateness of the target audience; 2) topic knowledge, i.e., the relevance of the topic; and 3) past behavior. Half the posters (17 out of 34) indicated that the appropriateness of the target audience drove forum choice. Important characteristics of the audience included their expertise or friendliness. About 44% of respondents believed that their

forum choice was related to topic relevance, matching their post content to the topic of the forum. For example, a respondent was writing a book about a camera of Nikon so he posted on the Nikon forum. Thus, posters combined topic knowledge with persuasion knowledge to choose a forum. Finally, 8.6% of participants indicated that their posting behavior was determined by prior browsing/ reading habits, e.g., this was the forum they visited most frequently. This might be due to affiliation reasons, in that frequently visited forums are ones in which they experience community.

In sum, the prevalence of audience characteristics and topic relevance to determine forum choice suggest that posters have and use persuasion knowledge in deciding where to post their messages. This corroborates the results of the classification of posts, which also found evidence of persuasion knowledge in online posting. In the next study, we conduct a lab experiment to test the hypotheses directly. We focus on forum choice as the dependent measure and how it is affected by different types of posting motive and the valence of these posts.

### **Pretest**

We conducted a pretest to confirm the assumption that posters have lay theories about forums and readers. Ninety-two undergraduates received course credit for participating. They were given a table that described two forums, Nikon Talk and Open Talk. The table also stated that target readers of the Nikon Talk are people who are interested in Nikon cameras, and the Open Talk targets people who are interested in photography in general. Participants were asked to rate the two forums on reader loyalty and valence of existing posts. Reader loyalty was measured by the statement “Readers of the xxx forum are likely to be extremely loyal to Nikon

products” on a seven point scale. Valence was measured by, “The posts and comments on the xxx forum are likely to be extremely positive.” (1= strongly disagree, 7 = strongly agree). Paired t-tests revealed that participants perceived the forums as intended. Participants perceived readers of the Nikon Talk to be more loyal to Nikon products than readers of Open Talk ( $M_{\text{Nikon}} = 5.99$ ,  $M_{\text{Open}} = 2.24$ ;  $t(91) = 20.6$ ,  $p < .001$ ). They also expected the posts on the Nikon Forum to be more positive than those on Open Talk ( $M_{\text{Nikon}} = 5.09$ ,  $M_{\text{Open}} = 3.13$ ;  $t(91) = 11.5$ ,  $p < .001$ ). These results suggest that consumers' lay theories about two types of forum are consistent with our assumptions.

## Study 1

The goal of study 1 is to test H1, that an influence motivated poster is more likely to post a positive message on a brand-neutral forum and a negative message on both forums. For generalizability across different influence motives, we examine three different types influence motives: self-enhancement, persuasion, and rewards-seeking.

### Method and Procedure

One hundred and sixty-one undergraduate students (48% female,  $M_{\text{age}} = 20.8$ ) at a large eastern university participated in the study as part of a course requirement. The study was a 3 (type of influential motive: self-enhancement, persuasion, and rewards-seeking) x 2 (message valence: positive, negative) between-subjects design. The study was administered on computers in the behavioral lab, with participants randomly assigned to treatments.

Participants were asked to imagine that they had just purchased a Dell Inspiron 15 laptop. They read a short description about the product specifications, including screen resolution and design. They were then given the valence manipulation, which described their experience with the product. In the positive valence condition, participants were told that their Dell Inspiron 15 functions very well and performs much better than they expected. In the negative valence condition, they learned that their laptop does not function very well and performs much worse than they expected.

Next, they received the motive manipulation. All participants were asked to imagine that they had decided to share their first-hand performance experience by posting the message on an online discussion forum. Under the self-enhancement motive, they were told that they wanted the post to be rated as useful by others. Specifically, “your goal is to choose a website such that forum users will be interested in your post and consider you a knowledgeable expert.” Under the persuasion motive, they wanted to persuade others to purchase the product. Specifically, “your goal is to choose a website such that forum users’ purchase decisions will be affected by your post.” (In the negative valence-persuasion motive condition, their objective was to dissuade others from purchasing). The rewards-seeking motive was just like the persuasion motive, but participants were told that they were hired by a buzz marketing firm to post their experience as opposed to posting for themselves. See appendix A for stimuli.

Participants then saw a table describing the two forums on which they could post. The brand-specific forum was called the Dell Review Forum and the brand-specific forum was the Computer Review Forum. The Dell Review Forum was described as a discussion forum that focuses on the Dell computer, targeted at people who are interested in Dell computers. The Computer Review Forum was described as a forum that focuses on computer information in

general, targeted at people interested in computers. To avoid any inferences about forum size, we stated that both forums attracted a daily readership of 1,500.

The measures were collected in the following order: dependent measures, manipulation checks, and control variables. Posting choice was measured by asking participants to indicate on which forum they would choose to post their Dell Inspiron 15 experience (1= Dell Review Forum, 2 = Computer Review Forum, 3 = I prefer not to post on either). Forum preference was measured as a relative preference; participants were asked to indicate which of the two forums would be more appealing to achieve their goal, if they were going to post (1= definitely Dell Review Forum; 7= definitely Computer Review Forum). The manipulation check for valence asked how positive or negative the content of their post would be on a seven-point scale (1= extremely negative; 7= extremely positive). Finally, we gathered demographic measures.

## Results

**Manipulation Checks.** A 3 (type of influential motive) x 2 (message valence) ANOVA on message valence revealed a significant main effect of valence ( $F(1, 155) = 280.9, p < .001$ ) and no other significant treatment effects. As expected, participants indicated that the content of their post would be more negative under the negative than positive condition ( $M_{\text{negative}} = 2.92, M_{\text{positive}} = 5.57$ ). Thus, the valence manipulation worked as intended.

A 3 (type of influential motive) x 2 (message valence) ANOVA on expected influence and usefulness of posts did not show main effect of type of influential motive ( $F(2, 155) = 0.32, p = .72; M_{\text{self-enhancement}} = 5.06, M_{\text{persuasion}} = 5.10, M_{\text{rewards-seeking}} = 5.20$ ). The insignificance suggests that participants' goal was to influence others in all three motive conditions. Thus, we combine

the three conditions in the following data analysis.

**Forum Choice.** H1 stated that posters whose primary motive is to influence others are more likely to post on a brand-neutral forum when posting a positive message and equally likely to post on both forums when posting a negative message. We coded choice of Computer Review Forum (brand-neutral forum) as 1 and 0 otherwise. Only five participants chose the no post option<sup>2</sup>. A logistic regression with valence as independent variable revealed a significant main effect of valence ( $\chi^2(1) = 5.30, p = .02$ ). Whereas 69.1% of participants in the positive condition chose to post on the brand-neutral forum, only 51.3% of participants in the negative condition chose to do so. More importantly, this pattern also suggests that participants under negative condition are equally likely to post on either forums. Thus, H1 is supported.

**Forum Preference.** H1 is also supported for the measure of forum preference. A one-way ANOVA revealed a significant main effect of message valence ( $F(1, 159) = 5.97, p = .016$ ). As predicted, participants preferred to post on the brand-specific forum when the valence was negative rather than positive ( $M_{\text{positive}} = 4.68; M_{\text{negative}} = 3.91$ ).

## Discussion

The results of study 1 provide initial support for hypothesis 1, that posting preference of consumers with an influence motive is affected by message valence. Specifically, when posting positive brand information, participants preferred a brand-neutral forum, but when

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<sup>2</sup> All results remain the same even when we delete these five participants.

posting negative brand information, they were equally likely to choose either a brand-neutral or a brand-specific forum. The lack of significant differences across the three types of influential motive suggests that these effects generalize to a variety of influential motives (e.g., self-enhancement, persuasion, rewards-seeking). Although study 1 provides initial support for H1, it would be useful to distinguish an influence motive from non-influence motives, such as an affiliation motive, in order to test H2.

## **Study 2**

The goal of study 2 is to test hypothesis 1 and 2. The study was a 2 (type of posting motive: influence, affiliation) x 2 (message valence: positive, negative) between-subjects design. A sample of 136 undergraduate students (33.8% female,  $M_{age} = 20.5$ ) participated as part of a course requirement. Participants were randomly assigned across treatments, and the study was administered in the lab.

### **Method and Procedure**

The procedure and the valence manipulation were the same as in study 1, with participants imagining that they had just purchased a Nikon D3000 digital camera and would like to share their product experience with others via posting online. Posting motivation was manipulated by telling participants in the influence motive condition that, “You want this post to influence others to read and comment on your post. That is, your goal is to choose a website such that forum users will be interested in responding to you and discussing your ideas.” In the

affiliation condition, participants were told that “You want this post to build up or maintain relationships with other online forum users. That is, your goal is to choose a website such that forum users will be likely to become your friends.” Next participants saw the description of the two forums, a brand-neutral forum (Open Talk) and a brand-specific forum (Nikon Talk). (See appendix B for stimuli).

Forum choice was measured as in study 1. Posting preference was measured via two items ( $r = .87$ ); "If you were to post on one of these two forums, how strong would be your preference? (1:strongly prefer Nikon Talk/ 9: strongly prefer Open Talk)"; and "If you were to post on one of these two forums, which forum would be more appealing for you to post your message? (1: definitely Nikon Talk/ 9: definitely Open Talk)".

The manipulation checks for motive consisted of three separate questions: “to what extent does the forum you chose allow you to make an impact on others?”; “to what extent does the forum you chose allow you to establish and make friends?” on seven point scales (1 = not at all, 7 = extremely likely). The message valence manipulation check was the same as in study 1. Next, participants responded to an open-ended question about why they chose that forum. The responses were coded to assess evidence of audience belief. We identified whether participants revealed any thoughts or inferences about audience characteristics regarding the existing brand attitude and how information may be processed by the readers. These audience characteristics include biased/unbiased, diverse/narrow, or brand loyalty. Audience belief was coded as 1 when the protocols revealed these audience characteristics, otherwise 0.

## **Results**

**Manipulation checks.** A 2 (type of posting motive: influence, affiliation) x 2 (message

valence: positive, negative) ANOVA on expected message valence revealed a significant main effect of valence ( $F(1, 132) = 364.7, p < .001$ ) and no other significant treatment effects. As expected, participants reported that they would post a positive message in the positive condition and a negative message in the negative valence condition ( $M_{\text{positive}} = 5.96, M_{\text{negative}} = 2.67$ ). Thus, the valence manipulation worked as intended.

To assess the motive manipulation, we ran two separate motive analyses. First, a 2 x 2 ANOVA on the motive of being impactful revealed a significant main effect of motive ( $F(1, 132) = 8.1, p < .03$ ) and no other significant treatment effects. Specifically, participants in the influence motive condition, compared to those in the affiliation condition, believed that the chosen forum would allow them to make an impact on others ( $M_{\text{influence}} = 5.39, M_{\text{affiliation}} = 4.91$ ). Next, a 2 x 2 ANOVA on the likelihood of making friends revealed a significant main effect of motive ( $F(1, 132) = 5.1, p < .03$ ) and no other significant treatment effects. Participants in the affiliation condition, compared to those in the influence condition, believed that the chosen forum would allow them to build friendships with others ( $M_{\text{influence}} = 3.29, M_{\text{affiliation}} = 3.96$ ). Thus, the motive manipulation worked as intended.

**Forum Choice.** Hypothesis 1 proposed that those with an influence motive would prefer to post positive messages to low loyalty audience and negative messages to either high or low loyalty audience. Hypothesis 2 stated that there is an interaction effect between motive and valence. Thus, a different posting pattern under affiliation motive will support H2. Consistent with study 1, we coded choice of Open Talk (brand neutral forum) as 1 and choice of others as 0. Only three posters chose the no post option and are included in the analysis. The full model is a logistic regression with two dummy variables for motive (with influence as the base), message

valence, two interaction terms between motive dummy and valence, and product knowledge as independent variables. As expected, there was a significant interaction effect between motive (influence vs. affiliation) and message valence ( $\chi^2(1) = 4.02, p < .05$ ). Consistent with hypothesis 1, for the influence motive condition, 66.7% of participants in the positive valence condition chose the brand neutral forum (Open Talk), but only 33.3% of participants in the negative condition chose this forum ( $\chi^2(1) = 7.35, p < .01$ ). In contrast, for the affiliation motive condition, about equal percentage of people in both valence conditions chose the brand neutral forum ( $M_{\text{positive}} = 60.6\%, M_{\text{negative}} = 61.8\%$ ;  $\chi^2(1) = .009, p = .92$ ). In sum, the interaction is consistent with our H2.

**Forum Preferences.** An ANOVA on relative forum preference revealed a significant interaction effect ( $F(1,132) = 6.23, p = .014$ ). Participants with an influence motive preferred to post on the brand-neutral forum (Open Talk) when posting a positive message than when posting negative brand information ( $M_{\text{positive}} = 5.78$  vs.  $M_{\text{negative}} = 4.20$ ;  $F(1,132) = 6.43, p = .012$ ). However, under affiliation motive, valence did not affect forum preference ( $M_{\text{positive}} = 5.39$  vs.  $M_{\text{negative}} = 6.03$ ;  $F(1,132) = 1.02, p = .31$ ). Thus, H1 and H2 are supported.

**Beliefs about Effective Persuasion.** According to our conceptual framework, message valence is more likely to affect the decision of where to post when posters have an influence motive, but not when they have an affiliation motive. Thus, the use of beliefs about effective persuasion is expected to be affected by valence condition only under the influence motive. As expected, there was a significant interaction effect between motive (influence vs. affiliation) and message valence ( $\chi^2(1) = 4.82, p < .03$ ), and a significant valence main effect

( $\chi^2(1) = 7.35, p < .01$ ). Specifically, under influence motive, participants posting positive information are more likely to mention the selected audience as unbiased or the unselected audience as biased, compared to when posting negative information ( $M_{\text{positive}} = 66.7\%$ ,  $M_{\text{negative}} = 33.3\%$ ,  $\chi^2(1) = 7.35, p < .01$ ). In contrast, under affiliation motive, participants are equally likely to mention these audience characteristics ( $M_{\text{positive}} = 54.5\%$ ,  $M_{\text{negative}} = 58.8\%$ ;  $\chi^2(1) = .13, p > .72$ ). Taken together, these results suggest that people have beliefs about effective persuasion, but only when they are motivated to influence, the use of persuasion beliefs depends on the valence of their posts. Specifically, under an affiliation motive, message valence does not affect the use of persuasion beliefs. However, under an influence motive, those posting negative information is less likely to have thoughts about audience characteristics. This may due to the fact that negative information is generally more useful to all readers. As a result, people want to save their cognitive capacity in thinking about audience characteristics.

Mediation tests show that the interaction effect on forum preference is driven by the use of audience beliefs. We use a mediated moderation analysis (Baron & Kenny 1986) and show that the moderated effect of motive and valence on forum preference is mediated by the use of audience beliefs. Specifically, motive x valence predicts audience beliefs ( $B = 1.56, SE = .71, p < .03$ ), which predicts forum preference ( $B = 4.29, SE = .27, p < .01$ ). The direct effect of motive x valence on forum preference, when being controlled by audience beliefs, is no longer significant ( $B = .63, SE = .54, p > .25$ ), while the audience belief is still significant ( $B = 4.22, SE = .28, p < .01$ ). Using the Sobel test, we confirm that the indirect effect is significant (Sobel's  $z = 2.17, p < .03$ ). Therefore, the results suggest that when influence motive people have thoughts about audience as having unbiased attitude toward the brand, they are more likely to choose a brand-neutral forum. That is, thinking of unbiased (biased) characteristic about the forum readers

make the brand-neutral forum more (less) appealing to them.

[Insert figure 1 about here]

## **Discussion**

Study 2 demonstrates that forum choice under an influence motive depends on both the poster's motive and message valence. In support of hypothesis 1, participants who wanted to influence others preferred a brand-neutral forum when posting a positive message, but revealed equal preference when posting a negative message. Moreover, this posting pattern was different from that in the affiliation motive condition, where posting choice was unaffected by message valence. We suggest that this is because beliefs about effective persuasion are not considered under the affiliation motive. The content analysis on thought protocols further support our argument. In other words, valence matters only when people are thinking about effective persuasion strategy.

Although we have so far demonstrated that posters strategically choose a forum to influence others (beliefs about effective persuasion), it is unclear about the source of the audience beliefs. For example, how did participants learn that one forum consists of audience that is more loyal to the target brand? Is it because the forum title (e.g., Nikon Talk) that allows them to make this inference, or is it because we describe the target reader (e.g., people who are interested in Nikon cameras)? The primary goal of study 3 is to examine the source of audience beliefs by varying forum information presented in each condition.

One limitation of the first two studies is the absence of posting on both forums; in real

world posting situations, consumers can post on multiple forums. Study 3 offers such an option in forum choice to better capture the realistic posting environment. In addition, although the first two studies manipulate valence by assigning a positive or negative consumption scenario, there is a possibility that a post's focal attribute is changed as well. For instance, those under positive condition may focus more on hedonic benefits, while those under negative condition may pay more attention to utilitarian attributes. To solve this potential confounding, in the next study we control posts' content by providing a written post.

### **Study 3**

#### **Method and Procedure**

The design was a 2 (message valence: positive, negative) x 3 (forum choice set: Forum Titles Only, URL Links Only, Both) between-subjects design. Participants were 312 adults (41.0% female,  $M_{age} = 32.4$ ) recruited from an online panel (Amazon Mechanical Turk) in exchange for a \$0.50 monetary reward and they were randomly assigned across treatments. Participants were asked to evaluate a Sony digital voice recorder by reading a consumption scenario. We manipulated message valence by describing the consumption experience as either positive or negative, and then provided a written post to reflect the experience. The exact wording of scenario, valence manipulation, and written post is included in Appendix D. Right after the consumption scenario, participants rated the recorder on a standard 5-point product rating scale (1: Awful/ 5: Excellent). Also, right after they read the written review, they were asked to report the message valence (1: Extremely Negative/ 7: Extremely Positive). The latter

serves as the valence manipulation check.

Next we describe their posting goal as either to encourage others to purchase (positive condition), or to discourage others from purchasing (negative condition) the Sony recorder. Then, participants were presented with a table consisting of two forums with forum descriptions. Our goal was to examine whether participants use forum titles or the forum content as the cue to infer audience characteristics (e.g. to develop audience beliefs). In the *Forum Titles Only* condition, one forum was called Sony forum, and the other was called Digital Recorder forum. In the *URL Links Only* condition, the first (second) forum is called Forum A (B) with a URL link that directs participants to visit the forum sample. On both of the forum sample pages, there are 10 threads that vary across different topics of brand and valence. Specifically, on forum A, the 10 topics were mostly Sony related, and the posts were more positive. However, on forum B, the 10 topics included both Sony and other brands (See Appendix E), and posts about Sony were mostly neutral. In the *Both* information condition, we presented the two forum titles as well as the two forum links. In all three conditions, we also controlled readership size as 500 readers a day on each forum.

The first dependent variable was forum choice, which contained four options: (1: Sony forum (or forum A); 2: Digital Recorder forum (or forum B); 3: Both forums; 4: prefer not to post). Next, we measured forum preference via two items as in study 2. In order to force participants to reveal their forum preference, we adopted a 10-point scale where the neutral option was available. The two items were averaged to form as a single forum preference measure ( $r = .85$ ). Our prediction for this study is that there is a main effect of message valence on forum choice and forum preference across all three choice set conditions since all participants have an influence motive. Finally, we collected demographic information.

## Results

**Manipulation Checks.** A 3 x 2 ANOVA on message valence revealed significant main effects of valence ( $F(1, 306) = 1100, p < .001$ ). Specifically, self-reported valence of the review was more positive under the positive than negative message valence condition ( $M_{positive} = 6.51, M_{negative} = 2.85$ ). Thus, the valence manipulation was successful.

**Forum Choice.** As in study 2, we coded choice of the brand neutral forum as 1 and choice of others as 0 and then ran a binary regression with valence, two dummy variables for the three forum sets, and two interaction terms as independent variables. The Forum Titles Only condition was used as the baseline. Because our primary interest is posting decision among brand-specific forum, brand-neutral forum, and both forums, those who decided not to post ( $N=12, 3.8\%$ ) were removed from the following main analyses. The regression revealed a marginally significant valence effect ( $\chi^2(1) = 2.87, p = .09$ ) as well as a significant forum set effect between set 1 (Forum Titles Only) and set 2 (URL Links Only) ( $\chi^2(1) = 19.93, p < .001$ ) on choice of brand-neutral forum. Specifically, participants are more likely to choose a brand-neutral forum under positive condition than those under negative condition ( $M_{positive} = 51.0\%$  vs.  $M_{negative} = 34.6\%$ ). In addition, the significant forum set effect suggests that those under the Forum Titles Only condition are more likely to choose the brand-neutral forum than those under the URL Links Only condition ( $M_{Titles\ Only} = 56.3\%$  vs.  $M_{URL\ Only} = 24.5\%$ ).

[Insert Table 3 about here]

Taken together, the valence main effect forum choice on what? suggests that across three forum choice sets, posters with an influence motive tend to rely on valence in making their forum choice (beliefs about effective persuasion). In addition, the choice set main effect suggests that forum titles and forum samples which provided post topics can change their audience beliefs. When the titles were presented, participants were more inclined to the brand-neutral forum, but then the forum posts were shown, participants were pulled over to the brand-specific forum.

In addition to using choice of the brand neutral forum as the dependent measure, we further conduct two other logit models with choice of brand specific forum and choice of both forums as the dependent measure. These show similar effects, and the results are presented in Table 4.

[Insert Table 4 about here]

**Forum Preferences.** A 3 x 2 ANOVA on forum preference revealed a significant main effect of valence ( $F(1,294) = 12.41, p < .001$ ) and a significant main effect of choice set ( $F(1,294) = 33.92, p < .001$ ). The valence main effect showed that participants preferred to post on a brand-neutral forum when posting positive Sony information than posting negative information ( $M_{\text{positive}} = 6.65$  vs.  $M_{\text{negative}} = 5.72$ ). Consistent with the results from forum choice, the valence main effect exists in all three choice sets (see Figure 2 for the means in each conditions). In addition, the choice set main effect suggested that the presence of different forum information can shift forum preference ( $M_{\text{titles}} = 7.29, M_{\text{links}} = 4.70, M_{\text{both}} = 6.42$ ). All three contrasts were

significantly different from each other (all  $ps < .01$ ). This result suggests that, although viewing forum titles can lead one to prefer a more general forum, when actually visiting the forums, one may prefer a brand-specific forum.

[Insert Figure 2 about here]

## **Discussion**

Study 3 replicated the previous findings that forum choice depends on message valence under three different forum choice sets which vary in the provided forum information. Consistent with previous studies, message valence affects where consumer post. In addition, our manipulation of three forum choice sets allowed us to explore the source of audience beliefs. We found that the presence of forum titles and forum content affects posting choice and preference. Specifically, forum titles may offer a cue that the audience on a brand-specific forum has biased attitude and that audience on a brand-neutral forum is less biased. On the other hand, forum content presented on the forum sample website would suggest that readers on one forum (e.g., forum A) may be more interested in the target brand than those on the other forum. Therefore, study 3 provides evidence that the source of audience belief can be developed both from forum titles (e.g., Forum Titles Only condition) as well as actual forum visits (e.g., URL Links Only condition).

## **General Discussion**

The objective of the paper was to show that consumers are intuitive media planners, who select appropriate audiences for their messages. Across three studies, we demonstrated that the decision of where to post is affected by the poster's motivation and the message valence of the post. In particular, posting under an influence motive differed from posting under an affiliation motive. Under an influence motive, participants preferred posting positive (negative) information on a brand-neutral forum (both forums). This pattern persisted across different manipulations of forum descriptions (study 3) and contrasted with the pattern under affiliation (study 2). Under affiliation, message valence did not significantly affect where participants chose to post.

We proposed that consumers have intuitive theories about the characteristics of the audience of different forums as well as theories about the importance of effective persuasion when making a posting decision. The pretest, along with three main studies demonstrated that this was the case. Participants indicated that, compared to a brand-neutral forum, a brand-specific forum was likely to have a more loyal audience to, as well as more positive posts about, the target brand.

## **Theoretical Contributions**

The paper contributes to the incipient literature on the use of persuasion knowledge in online contexts (e.g., Godes & Mayzlin, 2009; Kozinets, de Valck, Wojnicki, & Wilner, 2010). Whereas prior work has examined persuasion knowledge in the context of what people post, we demonstrate that consumers also have theories about where to post. Kozinets, de Valck, Wojnicki, & Wilner (2010) find that online bloggers strategically determine what to reveal to their followers because they know that telling the audience that the blogger has received free

products may not be well received. We find that online posters strategically determine where to post their messages in order to maximize the likelihood that others will read and respond to their posts. Our finding that attention is an important mediator of where people post reinforces Moe & Schweidel's (2011) work in the context of what people post; they found that frequent posters attempt to make their reviews more attention-getting by differentiating their reviews from existing ones. Future research may investigate other aspects of consumers' intuitive media planning theories, such as whether consumers have intuitive theories about when to post. In fact, the online context is particularly suitable to assessing the role of consumers as persuasion agents because there are so many opportunities for consumers to influence others through different web platforms.

Our research also adds to the behavioral literature on online WOM by demonstrating that the choice of where to post is important. Prior literature focuses on what, why and how consumers transmit online WOM. Berger & Milkman (2012) showed that content that evokes high-arousal emotions is more viral than content evoking low-arousal emotions. Moore (2012) investigated the impact of WOM language (e.g., explaining language vs. non-explaining language) on intentions in repeating sending the WOM. We add *where* as an important aspect of posting. One interesting avenue for research would be the dynamic nature of online posting decisions, particularly the interaction between what and where people post. For instance, in study 3, we found that as the forum description changes, posters will perform different choice pattern because of their inferences about audience.

## **Limitations and Future Research**

Our research provides evidence that consumers will behave like media planners when posting information on the Internet. We have shown that motivation and message valence determine the selection of online forums between a brand-specific forum and a brand-neutral forum. Our findings may be generalizable to website choice when 1) more than two options are in consideration or 2) both forum options are brand associated or neutral. In these types of choice scenarios, although we still expect both audience beliefs and beliefs about effective persuasion to have impact on forum selection, the prediction is unclear. This is because our research does not discuss consumers' lay theory or inferred forum characteristics across all available types of forums. For example, when two forums differ in group norms, this will be beyond our current conceptual framework. One obvious solution to address this issue might be to explore posters' lay theories about different types of forums or websites. For example, what factors determine whether someone uses Twitter or Facebook? Are there generalizable theories about these different media outlets?

Another issue is whether valence would always affect forum choice and preference under an influence motive. In other words, what might moderate the impact of message valence on forum choice? We might expect that valence may be less predictive of forum choice when a poster is highly familiar with a specific forum, or when reciprocity motivation underlies the posting behavior. For example, a frequent visitor of the Nikon forum may feel more comfortable posting there. Similarly, when a consumer receives helpful product information on Amazon, she may want to contribute back to Amazon to help others.

Product category might be a limitation for this research as well. Across three studies, we studied camera, computer, and digital voice recorder, all three could be categorized as consumer electronics goods. We did not consider intangible products such as music, movies, or sports

events. Intangible products might change our results because such product evaluation relies more on consumption experience that lacks of objective product attributes to support their persuasion argument. Specifically, the idea of being salient to affect others may not be a good strategy when expressing negative opinions about a sports team on the team forum. This approach is not going to change the fans' support for the team, but might end up leading to a serious violation of the forum regulation or norm. Future research may consider to extend our research findings to a more hedonic consumption scenario.

## APPENDICES

### Appendix A : STIMULI (STUDY 1)

Imagine that you just purchased the Dell Inspiron 15 laptop.

The Inspiron 15 is the back-to-basic mainstream 15” notebook from Dell. It has a 15.6-inch glossy wide-screen LED screen that offers a native resolution of 1,336 x 768 pixels. The design of the Inspiron 15 offers a smooth rounded profile and clean lines. With a built-in Intel Core 2 Duo processors T400 and 6-cell battery, the Inspiron 15 is an ideal system to meet your needs at school or home.

#### **Manipulation of Message Valence**

**[Positive Message]** After playing with the Dell Inspiron 15 for a few days, you find that it functions very well. You are very satisfied with the speed of the Inspiron 15 and it is very easy to setup and start using. In fact, the laptop performs much better than you expected.

**[Negative Message]** After playing with the Dell Inspiron 15 for a few days, you find that it does not function very well. You are very disappointed by the speed of the Inspiron 15 and it is not easy to setup and start using. In fact, the laptop performs much worse than you expected.

#### **Wording of Influence Motive**

Imagine that you decide to share your Dell experience with others by posting your first-hand experience on an online discussion forum.

**[Influence\_positive]** Specifically, you want this post to persuade others to purchase this product. That is, your goal is to choose a website such that forum users’ purchase decision will be affected by your post.

**[Influence\_negative]** Specifically, you want this post to dissuade others from purchasing this product. That is, your goal is to choose a website such that forum users’ purchase decision will be affected by your post.

Appendix B: STIMULUS MATERIALS (STUDY 2)

Forum Comparison Table

Forum	Nikon Talk Forum	Open Talk Forum
Target Reader	People who are interested in Nikon cameras	People who are interested in photography in general
Readership Size	About 3,000 readers a day	About 3,000 readers a day

Appendix C: STIMULUS MATERIALS (STUDY 3)

Forum Comparison Table

Choice Set 1: Forum Titles Only

Forum	Sony Forum	Digital Recorder Forum
Readership Size	About 500 readers a day	About 500 readers a day

Choice Set 2: URL Links Only

Forum	Forum A	Forum B
Readership Size	About 500 readers a day	About 500 readers a day
URL Link	Forum A	Forum B

Choice Set 3: Both Forum Titles and URL Links

Forum	Sony Forum	Digital Recorder Forum
Readership Size	About 500 readers a day	About 500 readers a day
URL Link	Sony Forum	General Forum

## Appendix D: STUDY 3 STIMULI

Sony recently introduced a new thin-style Micro SD digital voice recorder. It has a built-in digital stereo microphone and built-in speaker that allow you to record and play easily. It gets up to 1,108 hours of MP3 recording with 4GB of internal memory, plus a micro SD memory card slot for virtually endless recording capacity. As seen in the recorder image below, it is one of the slimmest recorders you can find on the market.

### **[Positive Experience and post]**

Imagine that you recently purchased this Sony recorder. As expected, the Sony recorder is thin, portable, and has excellent battery life. Most importantly, you find the audio quality great and the sensitivity excellent. Its performance, in fact, exceeds your expectation.

" I was looking for a thin recorder to record my college lectures, and I noticed the Sony digital recorder. It's small, has an above average battery life, and easily fits into my pocket. Although I was a little concerned that I would not be able to hear the instructor's voice in a large lecture hall, I was pleased that it picked up the sound clearly. Given that it's super portable, with excellent memory (lots of hours of recording), excellent battery, and quality recording, I am very happy with my purchase decision."

### **[Negative Experience and post]**

Imagine that you recently purchased this Sony recorder. As expected, the Sony recorder is thin, portable, and has excellent battery life. However, you found the audio quality disappointing and the sensitivity poor. Its performance, in fact, fails to meet your expectation.

" I was looking for a thin recorder to record my college lectures, and I noticed the Sony digital recorder. It's small, has an above average battery life, and easily fits into my pocket. However, I was a little concerned that I would not be able to hear the instructor's voice in a large lecture hall, and I was disappointed when it did not pick up the sound clearly. It's super portable, with excellent memory (lots of hours of recording), and excellent battery, but I am very unhappy with my purchase decision."

## Appendix E: STIMULUS MATERIALS (STUDY 3)

### Forum Samples: Sony Forum (or Forum A)

Thread / Thread Starter	Last Post	Replies	Views
Sony recorder vs. Yamaha ( 1 2 3 ... Last Page) Smierl Spionam	Today 07:58 AM by Strider	382	13,840
Reduce noise in Sony ACID8 SpikieDurdin	Today 07:47 AM by GasEcc	21	1,162
My Sony ICD-SX712D review ( 1 2 ) Boume101	Today 06:43 AM by alhf1980	69	4,361
Best recorder ever- Sony ICD-JX512( 1 2 3 ... Last Page) Boume101	Today 04:41 AM by Ludoff	177	9,829
Why I chose Sony rather than Olympus drc5145	Today 04:17 AM by QUENTIN	84	9,791
Sony Sound Forge Pro 10.0 with Mac! Briare Rabbit	Today 04:03 AM by Fiema	21	246
Fantastic little digital recorder by Sony! C. Powers	Today 02:51 AM by mR Wood	13	465
Eats batteries while "off" - Sony ICD-BX112 recorder Webhawk50	Today 02:46 AM by Randy	56	2,134
Perfect for lecturer recorder- Sony ICDUX52 Strohman	Today 02:31 AM by Elliott	143	7,463
Sony ICD- AX412- Highly recommended Don	Today 01:49 AM by Philips	43	643

### Forum Samples: Digital Recorder Forum (or Forum B)

Thread / Thread Starter	Last Post	Replies	Views
Which would you recommend? Sony or Yamaha? ( 1 2 3 ... Last Page) jpslaw	Today 07:38 AM by bamez25	346	16,441
Good recording software Matsui33	Today 07:17 AM by Manslick	28	1,012
Upgrading advice: VS1680 or Zoom R24? ( 1 2 ) Lurgie	Today 06:33 AM by Fietl	69	5,061
Olympus VN-8100 is a good recorder( 1 2 3 ... Last Page) Quay0000	Today 04:49 AM by alvand	157	8,239
Buy: Sony VR5320R jpdj	Today 04:03 AM by jpslaw	79	9,311
Recommendation for class recording..PLEASE! Beeknee93	Today 03:44 AM by reiser	22	319
Samsung vs. Sony, what is your pick? BusConverter	Today 03:23 AM by Smith	19	577
Review: Olympus DP-10- recommended JH85a	Today 02:49 AM by KEN	68	2,001
SONY ICD-BX112 is a Good recorder, but..... randall	Today 01:57 AM by bob	164	7,122
Toshiba DR430, is it worth \$89? PRN	Today 01:39 AM by locust	24	599

## FIGURES

Figure 1

### FORUM PREFERENCE BY CONDITIONS IN STUDY 2

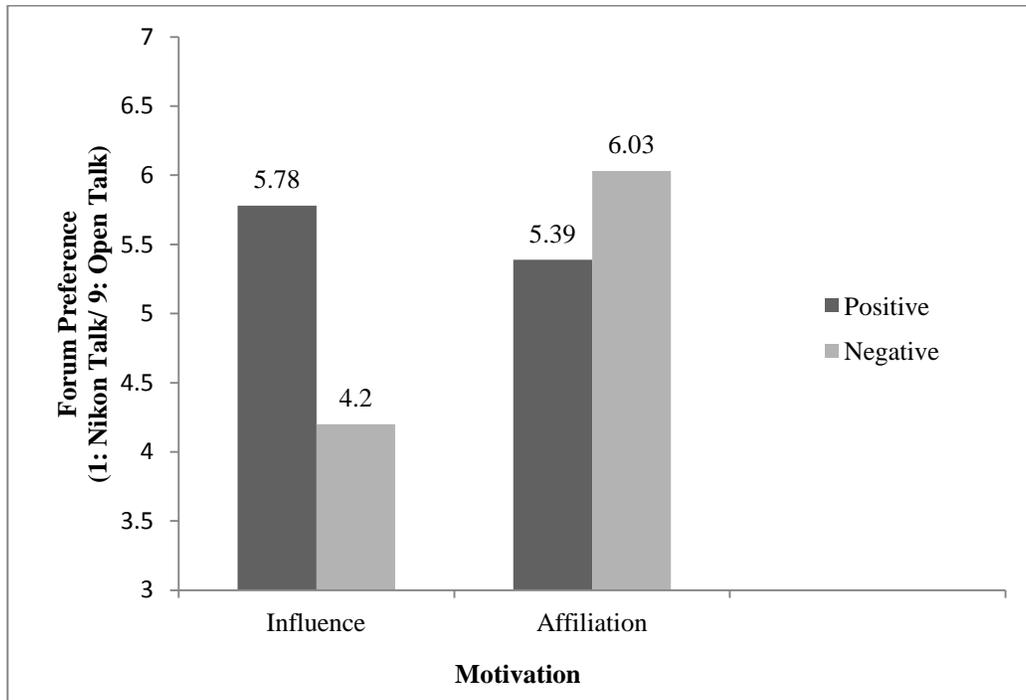
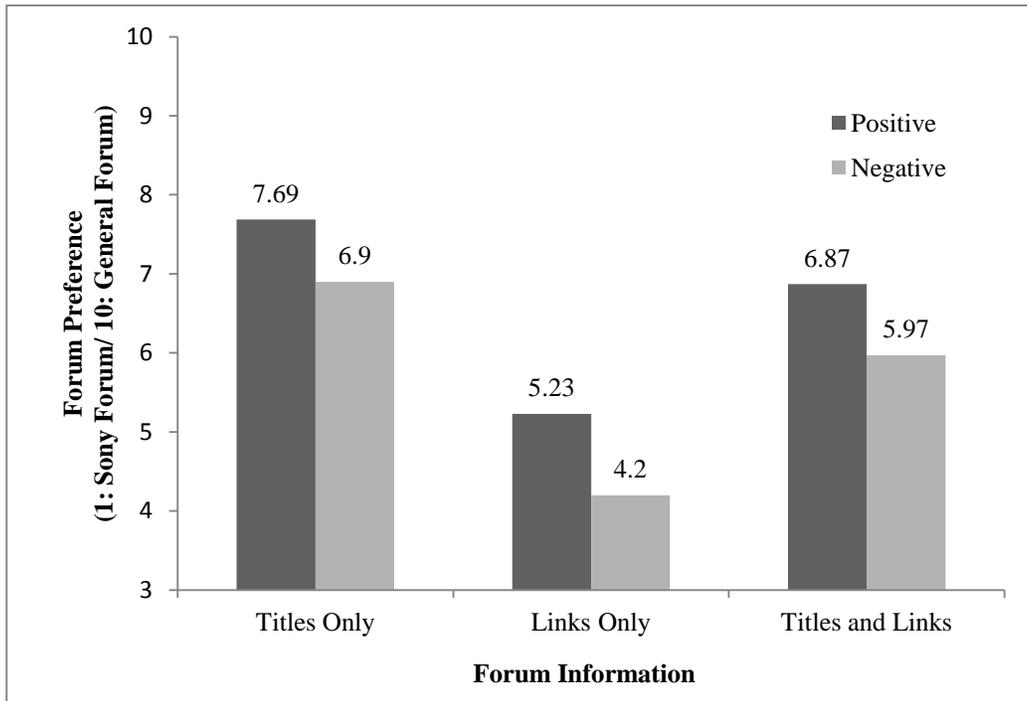


Figure 2

FORUM PREFERENCE BY CONDITIONS IN STUDY 3



**Table 1**

## Posting Nature, Definition, and Examples (Online Posting Study)

Nature of the post	Number of posts	Definition	On brand-specific forum	On brand-neutral forum	Example
Information seeking	181	To ask a question, seek advice, or ask for help	100 (55%)	81 (45%)	According to dpreview "the D3000 has a tendency to deliver rather bright mid tones, which can threaten highlight detail, especially in JPEGs" is there anything I can do to fix this?
Information sharing	80	To share one's own experience, photos, or advice	69 (86%)	11 (14%)	I can rent a 17-55 for my Oktoberfest trip (this month) and see how it goes, but I think I should just buy one used say \$1100 and put these two lenses on ebay.
Topic generation	49	To offer an opinion or try to start a discussion	32 (65%)	17 (35%)	Do you all agree, or am I missing something? Is the IQ clearly better on the d7000 for you all?
Direct influence	34	To persuade someone to do something (e.g., buy a camera, take an action), or think a certain way	22 (65%)	12 (35%)	Here is a pretty good review for the Panasonic Lumix LX5. Video Review: <a href="http://shrt.fm/n80FRx">http://shrt.fm/n80FRx</a>
Total	276		179	97	

Note.- The total number is not calculated by summing the number of each categories because some posts belong to multiple categories when we identified the posts with having multiple purposes.

**Table2**

Posters Characteristics vs. Forum Type (Online Posting Study)

	Brand-Specificforum	Brand-Neutral forum
Membership	1098 days	1453 days*
Number of total messages	702 posts	469 posts
Post length	702 words	469 words

Note.- One asterisk indicates  $p < .05$

**Table 3**

## FORUM CHOICE BY CONDITIONS IN STUDY 3

Choice_Set Condition	Valence	Forum Choice			Size
		Forum A (brand-specific)	Forum B (brand-neutral)	Both	
Forum Tiles Only	Positive	9.8%	64.7%	25.5%	51
	Negative	21.2%	48.1%	30.8%	52
URL Links Only	Positive	37.8%	35.6%	26.7%	45
	Negative	51.0%	14.3%	34.7%	49
Both	Positive	27.5%	51.0%	21.6%	51
	Negative	23.1%	41.2%	36.5%	52

**Table 4**

## RESULTS OF BINARY LOGISTIC REGRESSION MODELS IN STUDY 3

Variables	Dependent Variables					
	Choice on brand-neutral forum		Choice on brand-specific forum		Choice on both forums	
	Coefficient	SE	Coefficient	SE	Coefficient	SE
Intercept	.265	.202	-1.767***	.290	-.942***	.220
Valence	.342*	.202	-.452	.290	-.131	.220
Set_Dummy1	-.146***	.327	1.538***	.358	.120	.315
Set_Dummy2	-.440	.283	.680	.369	.020	.313
Valence * Set 1	.257	.327	.182	.358	-.059	.315
Valence * Set 2	-.127	.283	.568	.369	-.239	.313

\*  $p < .10$ .\*\*  $p < .05$ .\*\*\*  $p < .01$ .

Notes: Forum Titles Only serves as the baseline condition which is coded as (0,0), URL Links Only condition is coded as (1,0), and Both condition is coded as (1,1).

# Questionnaires

Questionnaire A (Chapter II- Study 1)

1. On which forum would you choose to post your Dell Inspiron 15 experience? Please check one and only one of the listed options below.

- Dell Review Forum;
- Computer Review Forum;
- I prefer not to post my Dell Inspiron 15 experience on either of these forums.

2. Please describe why you chose this forum to post your product experience.

---

3. If you were to post, which forum would be more appealing for you to achieve your goal?

Definitely	Equally appealing	Definitely
Dell Review Forum	+3 +2 +1 0 +1 +2 +3	Computer Review Forum

4. To what extent do you think you can achieve your goal by posting online?

<input type="checkbox"/>						
Not at all						Very much

Here are a few questions about posting online

1. How positive or negative do you think the content of your post will be?

<input type="checkbox"/>							
Extremely Negative							Extremely Positive

2. To what extent would the forum you chose allow readers to consider you as a product expert?

<input type="checkbox"/>							
Not at all							Extremely Likely

3. To what extent would the forum you chose allow readers to consider your post useful?

Not at all	1 2 3 4 5 6 7	Extremely likely
------------	---------------	------------------

4. To what extent would the forum you chose allow your post to affect others' purchase decision?

Not at all	Extremely likely
------------	------------------

1 2 3 4 5 6 7

5. To what extent do you believe that you will financially benefit from posting this message on the website?

Not at all

1 2 3 4 5 6 7

Very much

Here are a few questions about the Dell forum

	Strongly Disagree						Strongly Agree
1. Readers of the Dell forum are likely to be extremely loyal to Dell products.	1	2	3	4	5	6	7
2. Readers of the Dell forum are likely to be about to purchase a computer?	1	2	3	4	5	6	7
3. Readers of the Dell forum are likely to have similar brand preference to each other.	1	2	3	4	5	6	7
4. Most posts/comments about Dell products on the Dell forum are likely to be extremely positive.	1	2	3	4	5	6	7
5. Readers of the Dell forum are likely to be open-minded about different viewpoints.	1	2	3	4	5	6	7
6. Readers of the Dell forum are likely to be knowledgeable about computers.	1	2	3	4	5	6	7
7. I am very similar to other readers of the Dell forum.	1	2	3	4	5	6	7

Here are a few questions about the Computer Review forum

	Strongly Disagree						Strongly Agree
8. Readers of the Computer Review forum are likely to be extremely loyal to Dell products.	1	2	3	4	5	6	7
9. Readers of the Computer Review forum are likely to be about to purchase a computer?	1	2	3	4	5	6	7
10. Readers of the Computer Review forum are likely to have similar brand preference to each other.	1	2	3	4	5	6	7
11. Most posts/comments about Dell products on the Computer Review forum are likely to be extremely positive.	1	2	3	4	5	6	7
12. Readers of the Computer Review forum are likely to be open-minded about different viewpoints.	1	2	3	4	5	6	7
13. Readers of the Computer Review forum are likely to be knowledgeable about computers.	1	2	3	4	5	6	7
14. I am very similar to other readers of the Computer Review forum.	1	2	3	4	5	6	7

1. How familiar are you with personal computers?

Not at all familiar Very Familiar

2. How familiar are you with laptops?

Not at all familiar Very Familiar

3. How familiar are you with Dell products?

Not at all familiar Very Familiar

4. How familiar are you with Dell Inspiron 15?

Not at all familiar Very Familiar

5. What brand of laptop computers have you ever owned? (please check them)

Acer    Apple    Asus    Dell    Fujitsu    Gateway

HP    Lenovo    MSI    Panasonic    Sony    Toshiba    Others

6. I found the decision of choosing a website to post my product experience to be

Extremely easy Extremely difficult

1   2   3   4   5   6   7

7. Overall, the task of choosing where to post my product experience was

Not at all interesting Extremely interesting

1   2   3   4   5   6   7

8. Overall, the task of choosing where to post my product experience was

Not at all involved Very involved

1   2   3   4   5   6   7

Questionnaire B (Chapter II- Study 2)

1. On which forum would you choose to post your Nikon D3000 experience? Please check one and only one of the listed options below.

- Nikon Talk;
- Digital Camera Open Talk;
- I prefer not to post my Nikon D3000 experience on either of these forums.

2. Please describe why you chose this forum to post your product experience.

---

3. If you were to post on one of the two forums, how strong would be your preference?

Strongly prefer		No Preference		Strongly prefer						
Nikon Talk	+4	+3	+2	+1	0	+1	+2	+3	+4	Digital Camera Open Talk

4. If you were to post, which forum would be more appealing for you to achieve your goal?

Definitely		Equally appealing		Definitely						
Nikon Talk	+4	+3	+2	+1	0	+1	+2	+3	+4	Digital Camera Open Talk

5. To what extent does the forum you chose allow you to make an impact on others?

Not at all								Extremely likely
	1	2	3	4	5	6	7	

6. To what extent does the forum you chose allow you to establish and make friends?

Not at all								Extremely
	1	2	3	4	5	6	7	

7. To what extent does the forum you chose allow you to help others?

Not at all								Extremely likely
	1	2	3	4	5	6	7	

8. To what extent do you think you can achieve your goal by posting online?

<input type="checkbox"/>							
Not at all							Very much





Questionnaire C (Chapter II- Study 3)

1. How would you rate the Sony digital recorder based on this scenario? (1: Awful/ 5: Excellent)
2. How positive or negative would you rate the content of your post? (1: Extremely negative/ 7: Extremely positive)
3. On which forum(s) would you post your review? Please select one of the listed options that you think you can persuade others to take your advice. You will be typing the review on that forum.  
 Forum (A)  
 Forum (B)  
 Both Forums (You are expected to wait an additional 30 seconds for system processing if the option is chosen)  
 Prefer not to post
4. If you were to post on one of these two forums to persuade others to take your advice, how strong would be your preference? (1: Strongly Prefer Forum A/ 10: Strongly Prefer Forum B)
5. If you were to post on one of these two forums to persuade others to take your advice, which forum would be more appealing for you to post your message? (1: Definitely Forum A/ 10: Definitely Prefer Forum B)
6. Why did you make this choice?

---

**Please answer the following questions based on the provided forum information and how you feel about these forums. (1: Definitely Forum A/ 10: Definitely Prefer Forum B)**

1. On which forum do you think readers are more loyal to Sony brand?
2. On which forum do you think readers are more likely to have a positive attitude towards Sony?
3. On which forum do you think readers are more open to accepting negative views about a Sony digital recorder?
4. On which forum do you think you are more likely to influence readers' purchase decisions about digital recorders?
5. On which forum do you think the posts and discussions are likely to be mostly positive about the Sony brand?
6. On which forum do you think a positive review about the Sony recorder is more likely to capture readers' attention?
7. On which forum do you think a positive Sony recorder review is likely to stand out from other posts in that forum?
8. On which forum do you think a negative Sony recorder review is more likely to capture readers' attention?
9. In this product review scenario, what is your posting goal? (1: Strongly discourage others from buying; 7: Strongly encourage others to buy)
10. In this product review scenario, how important is it for you to affect forum audience's purchase decision? (1: Not at all important; 7: Very Important)
11. To what extent do you think the readers on the chosen forum are likely to be persuaded by your Sony review? (1: Not at all likely; 7: Very likely)
12. In general, how likely are you to post the same message through multiple online channels (e.g., two different forums or several different websites)? (1: Not at all likely; 7: Very likely)

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*Working Paper.*

## **Chapter III:**

# Rating With Confidence: How Rating Scales Affect Future WOM Behavior

Yu-Jen Chen and Dave Godes

Marketers today are inviting and encouraging consumers to write product reviews or share their consumption experiences with their friends or other consumers (Kumar, Peterson, and Leone 2010; Ryu and Feick 2007). User-generated conversations among different offline and online channels have been shown to impact consumption decisions across almost every product category, including books (Chevalier and Mayzlin 2006), movies (Liu 2006), TV shows (Godes and Mayzlin 2004), bath and beauty products (Moe and Trusov 2011), video games (Zhu and Zhang 2010), and restaurants (Godes and Mayzlin 2009). According to a study from PowerReview (2011), 59% of online shoppers use online product reviews to help them make purchase decisions. Online word-of-mouth (WOM), or WOM in general, is so influential primarily because it provides credible and vivid consumption experience and product information (Brown and Reingen 1987; Herr, Kardes, and Kim 1991).

Although it is clear that WOM may impact consumers as WOM receivers, there has been far less research to understand whether it can also affect WOM providers (see Moore 2012 for exception). For instance, what may happen to WOM speakers once they recommend a product to others? How might the process of writing a product review affect their subsequent behavior? Consider a consumer providing a product rating for a laptop on a 5-point rating scale (e.g., 1 as awful to 5 as excellent) and another consumer rating the same laptop on a 2-point scale (e.g., 1 as awful and 2 as excellent). If both consumers are relatively satisfied with the laptop performance, will one of them be more likely to recommend the product than other? In this paper, we aim to explore the impact of the product-rating process on raters' subsequent WOM behavior. Specifically, we compare product rating tasks employing either a 2-point or 5-point rating scale, and the impact this scale-design decision may have on raters' subsequent WOM intention and behavior.

Across four studies, we find that raters are more likely to engage in post-rating WOM behavior following a 5-point rating task as compared with a 2-point rating task. We propose a theory to explain this phenomenon which is based on the idea that the raters' certainty belief regarding their assigned rating scores is systematically affected by the rating scale in use. Specifically, all else equal, those rating on a 5-pt scale are more certain about the assigned rating score than those rating on a 2-pt scale. Consequently, higher rating certainty will lead to a higher likelihood of engaging in subsequent WOM behavior.

The current research makes several important contributions. First, while previous research on WOM studies its impact on other consumers as message receivers (Brown and Reingen 1987; Chevalier and Mayzlin 2006; Godes and Mayzlin 2004), our work suggests that the process of offering a product rating can affect the WOM senders as well. Second, we propose a novel marketing construct- rating certainty, and demonstrate its antecedents and consequences. These findings provide a novel idea that the amount of future WOM can be increased by selecting a rating scale system that enhances raters' rating certainty. Consequently, realizing that a product rating process can affect WOM behavior, marketers and managers can design an effective product rating environment to enhance raters' confidence about the rating process.

In the following sections, we describe our definition of a product rating task, introduce the concept of rating certainty, review the literature on rating scales, develop our hypotheses, and then test the hypotheses in four experiments. Finally, we conclude with a discussion of implications for theory and managers.

## **Literature Review and Theoretical Development**

## Product Rating as WOM Communication

Providing a product rating has come to be considered a form of WOM communication in which a rater offers her product evaluation, opinion, or thoughts on a rating score via various channels to other buyers and potential buyers (Berger 2013; Schlosser 2005). The process generally consists of five dimensions, including message senders, message content, communication channel, message recipients, and the effect of the communication (Schramm 1954). Consistent with this idea, WOM researchers have suggested that a rater would take the audience into account when participating in an online product review and rating task (Chen and Kirmani 2013; Hu and Li 2011; Moe and Schweidel 2012; Schlosser 2005). For example, Chen and Kirmani (2013) suggest that consumers are intuitive media planners who have beliefs about their audience's brand interests and will switch from one audience to another depending on message valence. Schlosser (2005) finds that the presence of others' opinions may influence how consumers assign a product rating. Hu and Li (2011) argue that newly-added reviews tend to differ from existing posts in order to be diagnostic and to contribute to the online community. Consistent with this view, we argue that an important difference between a product rating, on one hand, and a measure of product attitude, on the other, is the extent to which the rating contains an element of communication. In other words, consumers in a product rating task will consider their audience while consumers in an attitude assessment task are less likely to do so. In the next section, we introduce the concept of, and basis for, *rating certainty*. The nature of communication involved in a product rating task is an important distinction that allows us to differentiate rating certainty from attitude certainty.

## Belief with Confidence and Rating Certainty

Prior research has suggested that any belief or thought could be held with subjective level of confidence or certainty (Berger and Mitchell 1989; Roese and Sherman 2007). Research on certainty has suggested the existence of different types of certainty belief depending on the belief object. When a belief object refers to one's attitude, such a certainty belief is called attitude certainty. For example, in the statement "*I am sure that I like my new watch,*" *my new watch* is the attitude object, *I like it* is the attitude, and *I am sure that I like it* is the attitude certainty. Similarly, when a belief is about one's own personality or traits, the certainty belief refers to self-certainty, which describes one's subjective certainty judgment about one's self (e.g., I am confident that I am smart; Clarkson et. al 2009; DeMarree et al. 2007)<sup>1</sup>. Likewise, people may also have certainty belief with respect to their relation with others (e.g., relation-uncertainty; see DeMarree et al. 2007). Taken together, this literature suggests the potential for certainty judgment whenever a belief exists. The belief is considered a first-order cognition. The certainty judgment is considered a second-order cognition (e.g., metacognition) which is attached to the first-order cognition and is referred to as thoughts about one's own thoughts or thought process (Jost, Kruglanski, and Nelson 1998; Petty, Brinol, and Tormala 2002; Schwarz 2004). Importantly, even when people may have the same first-order cognition, their second-order cognitions may differ. For example, two people could have same attitude toward an object (e.g., they both like eating apples), but they may hold this attitude with different certainty levels (e.g., while I am sure that I like eating apples, you are not sure how much you like eating apples; see

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<sup>1</sup> Demarree et al. (2007) takes the view that one's self is a type of attitude, and therefore consider self-certainty an parallel form of attitude certainty.

Tormala and Rucker 2007). This viewpoint also implies that certainty judgment is subjective and may be affected by how a thought or an experience is generated (Fazio and Zanna 1978).

We propose that thoughts about *rating certainty* occur when raters participate in a product rating task. Analogous to the relationship between attitude and attitude certainty, we consider one's product rating the first-order cognition, and rating certainty the second-order cognition. That is, raters may have subjective beliefs about the extent to which the rating score offered to communicate with others can precisely capture their underlying utility about the product. When they think the rating score reflects perfectly their utility, their rating certainty level is higher, and vice versa. In addition, since rating certainty is a type of certainty belief, we expect it to lead to a similar impact as does a general certainty belief. Specifically, researchers have consistently found that a belief with higher certainty is more likely to predict belief-associated behavior (Fazio and Zanna 1978; Rucker and Petty 2004; Tormala and Petty 2002). In the present context, we argue that when a rater is more certain that the assigned rating score is accurate she will engage in behavior that is consistent with the rating score. That is, higher rating certainty (for a higher rating) should lead to a higher likelihood of WOM behavior. For example, imagine that two consumers rate assign a given product four stars out of five. While consumer "*certain*" has high rating certainty, consumer "*uncertain*" has low rating certainty. *Certain* knows that her 4-star rating is valid and precise perhaps because she had sufficient time to conduct the rating task or engaged in more deliberation. In contrast, *uncertain* thinks her 4-star rating may be incorrect. Perhaps she rated in a noisy environment, under time pressure, or randomly. Thus, even though their four-star ratings may each imply high satisfaction, which typically would drive WOM behavior (Anderson 1998), *uncertain* may be concerned that her rating is invalid, which weakens her intention to communicate the experience. As a result,

when rating certainty is lower, raters may feel less willing to share or to talk about their consumption experience. Therefore,

**H1:** All things equal, there is a positive relationship between rating certainty and future WOM behavior. Specifically, when a rater is more certain about the assigned rating score, she is more likely to engage in subsequent WOM communication.

### Rating Scale and Rating Certainty

Survey methodology scholars have long studied the researcher's choice of how many scale points to include in a survey response (Churchill and Peter 1984; Cox 1980). While the primary goal for scale design is to choose a reliable and valid scale (Cronbach 1950), some methodologists and consumer researchers have investigated other scale selection objectives, including respondent perception, inference, and discrimination capability (Hamilton, Ratner, and Thompson 2011; Komorita and Graham 1965; Schwartz et al. 1985; Tourangeau, Rips, and Rasinski 2000; Viswanathan, Sudman, and Johnson 2004). In particular, Komorita and Graham (1965) suggest that a scale with fewer scale points may not provide sufficient discrimination by consumers (e.g., I want to rate it at 7 out of 10, but the scale is a 5-point scale), however a scale with too many scale points may go beyond consumers' ability to discriminate one point from the other (e.g., Should I assign my rating as 67 or 68 out of 100?). In addition, instead of considering discrimination capability, Viswanathan et al. (2004) propose the concept of meaningful discrimination, which suggests that scale design should match how respondents typically consider the mindfulness level of a given question. Specifically, consumers may naturally think

it meaningful to rate a product at five different levels (such as awful, fair, good, great, and excellent), and a rating scale with above or below the five-point level may not capture fully consumers' underlying utility and therefore result in invalid responses.

This suggests that one's rating certainty level may be affected by the number of scale points. A rater may be less certain about her rating when the scale design is not capable of reflecting her true underlying utility. In order to examine whether scale points can affect rating certainty, we choose two of the most commonly used scale, 2-point and 5-point scales. Our prediction is that, a 2-point scale may not fully capture one's product evaluation, compared to a 5-point scale, because of its limited discrimination and meaningfulness (Viswanathan, Sudman, and Johnson 2004). Therefore, it is expected that a 2-point scale would result in lower rating certainty level than a 5-point scale would<sup>2</sup>. Thus,

**H2:** Consumers rating on a 5-point product rating scale, compared to a 2-point scale, will express higher levels of rating certainty.

We further expect that WOM likelihood is higher when raters are providing product rating on a 5-point scale than on a 2-point scale. More importantly, the impact of rating scale on WOM behavior is expected to be driven by rating certainty. That is, a scale can make a rater feel more certain about the rating score, and subsequently drive her to talk about the product in the future. Thus, we make the formal mediation hypothesis,

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<sup>2</sup> We expect that the relationship between scale points and rating certainty may not be a pure linear relationship, although we did not explicitly test this in this paper. For instance, when rating on a 100-pt scale, compared to a 5-pt scale, the probability that the assigned rating score is accurate may be lower (e.g., 1/100 vs. 1/5).

**H3a:** Consumers rating on a 5-point product rating scale, compared to on a 2-point scale, will have higher WOM likelihood.

**H3b:** The rating scale effect on WOM is mediated by rating certainty.

## Overview of Studies

In Studies 1, 2, and 3, we aim to show the basic rating scale effect on rating certainty and WOM intention. In so doing, we demonstrate the existence of the rating certainty construct and its distinction from the well-known attitude certainty construct. We also examine and rule out two alternative explanations: self-efficacy (Bandura 1997) and Grice's conversational maxims (Grice 1975). In Study 3, we seek to provide a boundary condition by switching the rating scale label to an attitude measure. We demonstrate that this approach will capture one's product attitude rather than one's product rating such that the rating scale effect will be attenuated. In the Study 4, we conduct our study in a more-realistic environment in which rating certainty belief is not measured explicitly, thereby making it less salient. Importantly, in Study 4, we our primary dependent variable is WOM behavior instead of simply WOM intention. This serves to generalize significantly our findings.

## Study 1

The primary goal of Study 1 is to examine whether different product rating scales can affect rating certainty and, in turn, WOM intention. Given that rating certainty is close to attitude

certainty, an important and valid concern is the extent to which we are able to distinguish between these constructs. This represents an important secondary goal of the study.

## Method

The design is a 2 (rating scale: 2pt, 5pt) x 2 (counterbalancing order: attitude certainty before rating certainty or vice versa) between-subjects design<sup>3</sup>. Participants (N = 122; Mean age = 33.9 years; 51.9% female; one missing) were recruited from an online panel (Amazon Mechanical Turk) and were randomly assigned to one of the four conditions with a monetary incentive of \$0.50 for completing the task. Participants in this study first watched a two-minute amateur video featuring a humorous conversation among three roommates. Next, depending on their conditions, about half of the participants first rated the video, assessed their rating certainty, and then reported attitude certainty. The other half first reported attitude certainty, and then rated the video and rating certainty.

We measured video rating score with two different scales (2pt, 5pt). Regardless of scale, we used the same end-point anchors: the low end was labeled "awful" and high "excellent". Once participants indicated their rating score, we embedded the assigned rating score in the next screen and asked them to report their rating certainty level on four nine-point scales ("How sure are you that the rating score [x] you assigned is precise?" from "not at all" to "extremely sure", "How definite is your rating score [x] of the video? from "not at all" to "very much", "The rating score [x] I assigned was clear, from "disagree" to "agree", and "The rating score [x] I assigned

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<sup>3</sup> We also include an exploratory condition with 100pt. Under the 100-pt rating scale, participants' responses are similar to those under the 2-pt condition. That is, compared to those under the 5-pt condition, raters under the 100-pt condition express lower rating certainty and show lower future WOM intention.

was precise, from “disagree” to “agree”). These items were adapted from Fazio and Zanna (1978). The four rating certainty measures were combined to form a single rating certainty measure ( $\alpha = .95$ ).

Next, we measured attitude certainty. We first adopted the thought-listing technique to elicit participants’ thoughts or opinions to make their attitude toward the video salient (see Cacioppo, Hoppel, and Ernst 1997). Then, participants provided their attitude toward the video on three seven-point scale (“Please provide your overall attitude toward the video. Scales were anchored at “negative/ positive,” “unfavorable/ favorable,” and “bad/ good”; we averaged the responses to form a single attitude index ( $\alpha = .98$ )). Once the attitude was measured, participants were asked to report their confidence level about their attitude toward the video via two questions: “How certain [sure] are you of your opinions toward the video? (1 = “not at all,” and 7 = “extremely certain [sure]).” These items were adapted from prior research (Tormala and Petty 2002). Again, we averaged the two scores given the high correlation between the two items ( $r = .94$ ). In the attitude certainty first condition, the procedure was exactly the same except that they first responded to the attitude measures and then to the two rating questions.

Next, participants indicated their likelihood of sharing the video with others on three seven-point scales (“I am likely to tell my friends about this video in the next week/ I am likely to forward this video at least to one person in the next week/ I am likely to share the video on any social network such as Facebook or Twitter in the next week; 1= “strongly disagree,” and 7 = “strongly agree”). We average the three items to formulate one WOM intention index ( $\alpha = .96$ ).

## Results

In the following analysis, we collapsed the rating-first and attitude-first conditions since no order effects were found. In addition, because WOM behavior is highly affected by consumption satisfaction (Anderson 1998), it is important that we control for this source of variation. However, note that there is a challenge in doing so; including only the raw rating score would introduce a bias since a rating of “2,” for example, means something very different for the 2-point than for the 5-point condition. To resolve this, we take a median split of the raw rating score to make the rating score covariate comparable between conditions.<sup>4</sup>

**Rating Scale Effect.** According to H2, those providing a product rating on a 5-pt scale will report higher rating certainty. We conducted a one-way ANCOVA, with (transformed) rating score as a covariate, on rating certainty. As predicted, we found a significant main effect for the rating scale ( $F(1, 119) = 10.10, p < .01$ ). Participants who rated the video on the 5-point scale showed higher rating certainty level ( $M_5 = 7.64$ ) than those in the 2-pt condition ( $M_2 = 6.41$ ). Thus, H2 is supported. In addition, H3 states that those under a 5-pt condition would report a higher likelihood of engaging in subsequent WOM. As predicted, a one-way ANCOVA on WOM intention reveals a significant scale main effect ( $F(1, 119) = 4.63, p = .03$ ). More WOM is predicted in the 5-point than in the 2-point condition ( $M_2 = 2.21; M_5 = 2.84$ ). Thus, H3a is supported<sup>5</sup>.

**Rating Certainty Effect and Mediation Model.** To examine the rating certainty effect, we estimate a regression model in which WOM intention is regressed on rating certainty and the

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<sup>4</sup> We adopt a different solution in the following studies in which we measure rating on a 10-pt scale at the end of the survey to replace and avoid the imperfect median-split technique (Fitzsimons 2008).

<sup>5</sup> The covariates in all of the ANCOVA models in this section were significant.

transformed rating score. The analysis revealed a significant main effect of rating certainty ( $b = 0.24, t(119) = 3.83, p < .001$ ) and a significant main effect of rating score ( $b = 2.01, t(119) = 7.43, p < .001$ ), suggesting that participants who felt more certain about the assigned rating score were more likely to engage future WOM behavior. Thus, H1 is supported. Finally, we examine whether the proposed scale effect on WOM intention is driven by rating certainty. The mediation analysis was based on the approach and SPSS macro (PROCESS Model 4) developed by Hayes (2012). The results indicate that rating certainty is predicted by the rating scale condition ( $b = .67, t = 3.15, p < .01$ ). In addition, WOM is predicted by both rating scale ( $b = .63, t = 2.15, p = .03$ ) and rating score ( $b = 2.05, t = 7.04, p < .001$ ). As rating certainty was included in the last model to predict WOM, scale condition is no longer significant ( $b = .35, t = 1.22, p > .22$ ) while rating certainty remained significant ( $b = .22, t = 3.34, p < .01$ ). Importantly, the proposed indirect effect of rating scale on WOM through rating certainty was supported since the 95% confidence interval excludes zero ( $b = .27, SE = .12; 95\% CI = .09 \text{ to } .57$ ). Thus, H3b is supported.

**Attitude Certainty.** A one-way ANCOVA on attitude certainty do not show either a significant covariate main effect ( $F(1, 119) = .001, p > .97$ ) or a significant scale effect ( $F(1, 119) = .16, p > .69$ ). Specifically, participants showed about the same attitude certainty level across three scale conditions ( $M_2 = 8.02; M_5 = 7.91$ ), suggesting that offering a rating score on different scales would not impact the certainty with which one forms or holds her attitude toward the object. In addition, we find that attitude certainty is correlated to rating certainty ( $r = .43$ ), but only rating certainty is affected by rating scales. Both results suggest that rating certainty is indeed a distinct construct from attitude certainty.

## Discussion

Study 1 provides initial evidence that the chosen rating scale may affect raters' certainty belief about their reported score (rating certainty; H2), which subsequently influences their willingness to share information about their consumption experience (WOM intention; H3a). We also provide evidence that the scale effect on WOM intention is driven by rating certainty (H3b), not attitude certainty, which does not appear to be a function of rating scale.

One may argue that, the scale effect on rating certainty occurs because of the presence of neutral point under the 5-pt condition. To examine this, we compare rating certainty across 5 rating scores. A one-way ANOVA on rating certainty revealed a marginal significant rating score effect ( $F(1, 56) = 2.05, p = .10$ ), suggesting that rating score may be relating to rating certainty. Specifically, rating certainty is 8.13, 6.98, 7.71, 7.75, and 8.65, for those who rated the video as 1, 2, 3, 4, and 5, respectively. Clearly, this score-certainty relation does not follow a linear relationship, and is more like an U-shape relation. To test this, we regress rating score and rating score square on rating certainty and the results show that both rating score ( $b = -1.27, t = -1.82, p = .07$ ) and rating score square ( $b = .25, t = 2.07, p = .04$ ) are at least marginal significant, suggesting that rating toward the neutral point (e.g. 3-point) may not enhance one's rating certainty belief. That is, the presence of a neutral point couldn't explain why participants reported higher rating certainty on a 5-pt scale than on a 2-pt scale. To further examine the effect of neutral point presentation, we temporarily exclude those who rated 3 in the 5-pt condition. people are less certain when rating toward the neutral point. Consistent with previous findings, rating certainty is higher under the 5-pt condition than the 2-pt condition ( $M_5 = 7.66; M_2 = 6.37; F(1, 105) = 8.47, p < .01$ ). Taken together, these results suggest that the presence of neutral

point does not seem to explain why a 5-point scale can lead to higher rating certainty than a 2-point scale.

While we find support for our hypotheses, there exist at least two viable alternative explanations for our results. First, according to Grice's conversational maxims (1975), raters as communication partners may use rating scale as a cue to make inferences about the underlying purpose of the research and will subsequently give as much information as needed. Consequently, as one elaborates more and offer more thoughts, their beliefs become more certain, which may subsequently lead to WOM behavior (Barden and Petty 2008). To investigate this possible mechanism, we used the word count of the participants' thought listings as a proxy for elaboration intensity. We then estimated a negative binomial regression of word count as a function of rating scale and rating score. However, this analysis yielded no main effects (all  $ps > .32$ ). Notably, the average number of words listed were 38.9 and 34.7 for the 2pt and 5pt conditions, respectively. Therefore, Grice's conversational maxims does not appear to explain our findings.

A second alternative explanation may be based on the idea that the act of rating may be seen as a belief-updating process that may change one's self-efficacy level (Bandura 1997; Hoch and Deighton 1989). If a rater relies on her reported rating certainty as information to update her belief in her ability to execute a task, then she may end up deciding not to transmit WOM following a low report. We examine this account in Study 2.

## **Study 2**

### Method

Sixty-one adults (mean age = 33.5 years; 57.4% female) were recruited from the same online panel as in Study 1. They were randomly assigned to either a 2-pt scale condition or a 5-pt scale condition. The study procedure was similar to Study 1, except we employed a different stimulus (a real product-evaluation task) and collected general self-efficacy measures. All participants listened to a one-minute music clip that, they were told, was recorded using a Sony digital recorder. Their task was to evaluate the recorder performance. After listening to the music, they reported a rating score on either a 2-pt or 5-pt scale, and then indicated their rating certainty level on the same scale as in Study 1. Next, we asked them to report their likelihood of telling others about the recorder *when others are in the market for a digital recorder*. This WOM measure is different from that employed in Study 1 in which we captured general behavioral intentions. The Study 2 measure is built on a hypothetical scenario in which participants' friends are in the market of the product. We adopted this measure both as a means of demonstrating robustness and, we hoped, in an effort to boost the levels of reported WOM. See Appendix A1 for the wording of the WOM measures.

Next, in order to evaluate self-efficacy as an alternative mechanism, we measured general self-efficacy using 10 items anchored at 1 (“not at all true”) and 4 (“exactly true”). We used the scales developed by Schwarzer and Jerusalem (1995) since they have been widely used to assess a general sense of perceived self-efficacy with the aim of predicting coping with adaptation after experiencing stressful events (see Appendix A2). We average the ten items to formulate one self-efficacy index ( $\alpha = .89$ ). Finally, we measured product rating again, this time on a 10-pt scale. This approach allows us to control for consumption satisfaction in a consistent way across conditions.

## Results

Similar to Study 1, we first test our hypotheses and then examine whether self-efficacy or attitude certainty might explain the results.

**Rating Scale Effect.** A one-way ANCOVA with rating score as a covariate<sup>6</sup> on rating certainty revealed a significant rating certainty main effect ( $F(1, 58) = 8.24, p < .01$ ) and a marginal significant rating score main effect ( $F(1, 58) = 3.822, p < .06$ ). Participants who rated the video on the 5-point rating scale showed higher rating certainty level ( $M_5 = 7.46$ ) than those under the 2-pt condition ( $M_2 = 6.36$ ). Thus, H2 is supported. Next, we conducted a one-way ANCOVA on WOM intention. As predicted by H3a, we found a significant rating certainty main effect ( $F(1, 58) = 5.23, p < .03$ ) and a significant rating score main effect ( $F(1, 58) = 77.17, p < .001$ ). Participants under the 5-pt condition showed higher WOM intention than those under the 2-pt condition ( $M_5 = 5.09; M_2 = 4.41$ ). Thus, H3a is supported.

**Rating Certainty Effect and Mediation Model.** To test H1, we regressed WOM intention on rating certainty and the rating score. The analysis revealed a significant main effect of rating certainty ( $b = 0.18, t(96) = 3.14, p < .01$ ) and a significant main effect of rating score ( $b = .60, t(96) = 11.61, p < .001$ ), suggesting that participants who felt more certain about the assigned rating score were more likely to engage in future WOM behavior. Thus, H1 is supported. Finally, we estimated the same mediation model as in Study 1 to examine whether the proposed scale effect on WOM intention is driven by rating certainty. The results indicate that rating certainty is

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<sup>6</sup> Rating score is not affected by rating scale ( $p > .10$ )

predicted by both the scale condition ( $b = 1.09, t = 2.87, p < .01$ ) and rating score ( $b = .17, t = 1.96, p < .06$ ). In addition, WOM is predicted by both scale condition ( $b = .68, t = 2.29, p < .03$ ) and rating score ( $b = .58, t = 8.78, p < .001$ ). When rating certainty is included in the last model to predict WOM, scale condition is no longer significant ( $b = .37, t = 1.24, p > .21$ ) while rating certainty remains significant ( $b = .28, t = 2.93, p < .01$ ). The proposed indirect effect of rating scale on WOM through rating certainty is supported since the 95% confidence interval excludes zero ( $b = .31, SE = .17; 95\% CI = .07 \text{ to } .75$ ). Thus, H3b is supported.

**Self-Efficacy.** A one-way ANCOVA on self-efficacy revealed a significant main effect for the rating score covariate ( $F(1, 58) = 7.42, p < .01$ ) but no significant scale effect ( $F(1, 58) = 1.23, p > .27$ ). Specifically, participants showed about the same self-efficacy level between two scale conditions ( $M_2 = 7.85; M_5 = 7.90$ ), suggesting that offering a rating score on different scales does not seem to impact one's perceived level of general self-efficacy.

## Discussion

Study 2 replicates the main findings from Study 1 which supports the proposed theory that rating scales affect rating certainty, which subsequently drives WOM intentions. We rule out general self-efficacy as an alternative explanation and improved the covariate measure by using the same 10-pt rating scale at the end of the rating task. While these results are encouraging, our theory that a product rating task differs from a general attitude measure because the former consider the task as a communication process has not been examined directly. If the theory is true, then we should find that when a rating task leads raters to focus on their own attitude rather

than on the communication component, the impact of rating scale on rating certainty should be attenuated. In the next study, we aim to test this boundary condition by building on literature on scale label effect (Hamilton et al. 2011; Schwartz et al. 1985). Specifically, research has suggested that scale label can change responders' inferences, judgment, and behavior. Thus, we want to shift raters' evaluation focus from communicating with others to expressing their own attitude. We predict that, when this occurs, the rating scale effect should be mitigated.

### **Study 3**

The goal of Study 3 is to provide a boundary condition for the proposed rating scale effect. Based on the prior literature on the scale label effect, we suggest that when a product rating scale label is more consistent with a general attitude measurement scale, as compared to a product rating task which takes communication into account (Chen and Kirmani 2013; Hu and Li 2011; Schlosser 2005), the effect we have demonstrated in our previous studies will go away because responses will be focused on the rater's own attitude, rather than on the communication aspects of their product rating.

#### **Method**

Ninety-nine adults (mean age = 31.8 years; 47.5% female) were recruited from the same online panel as in Studies 1 and 2. The design is a 2 (scale point: 2 vs. 5) x 2 (scale label: awful-excellent vs. dislike-like) between-subjects design. The scale label manipulation is meant to focus the participant's attention on their own attitude ("like-dislike") or on the information

they're communicating to others ("awful-excellent"). The study procedure and stimuli were similar to Study 2 in which participants were asked to evaluate a Sony digital recorder after listening to a music clip. Following this, they provided rating certainty, WOM intention, and, finally, demographic information.

## Results

**Rating Scale Effect.** A 2 x 2 ANCOVA with rating score as a covariate on rating certainty revealed a marginally-significant interaction effect ( $F(1, 94) = 3.23, p < .08$ ) and a significant scale label main effect ( $F(1, 94) = 4.73, p < .04$ ), suggesting that the impact of scale on rating certainty is different between two scale label conditions. When the scale was labeled as dislike/like, participants were more certain about their rating ( $M_{\text{like}} = 7.41; M_{\text{excellent}} = 6.58$ ). Consistent with previous experiments, we found a significant scale effect on rating certainty under the awful/excellent label condition, such that participants indicated higher rating certainty levels in the 5-pt condition than the 2-pt condition ( $M_5 = 7.16; M_2 = 6.00; F(1, 94) = 5.72, p < .02$ ). In contrast, when the scale was labeled as dislike/like, rating certainty did not differ across two scale point conditions ( $M_5 = 7.30; M_2 = 7.52; F(1, 94) = .13, p > .71$ ). Thus, H2 is supported. Next, we conducted a 2 x 2 ANCOVA on WOM intention. As predicted by H3a, we found a marginal significant interaction effect ( $F(1, 94) = 3.47, p < .07$ ) and a significant rating score main effect ( $F(1, 94) = 127.29, p < .001$ ). Most importantly, consistent with H3a, in the awful/excellent (i.e., other-focused) condition, those responding to a 5-pt scale were more likely to transmit WOM than those on a 2-pt scale ( $M_5 = 4.69; M_2 = 4.07; F(1, 94) = 4.34, p = .04$ ). However, this pattern did not persist under the dislike/like (i.e., self-focused) condition ( $M_5 =$

4.16;  $M_2 = 4.41$ ;  $F(1, 94) = .48, p = .49$ ). There are no other significant differences among other comparisons (all  $p$ s  $> 0.40$ ).

**Rating Certainty Effect and Mediation Model.** Similar to Study 1, we examine the rating certainty effect by regressing WOM intention on rating certainty and the rating score. The analysis revealed a significant main effect of rating certainty ( $b = 0.34, t(58) = 2.63, p = .01$ ) and a significant main effect of rating score ( $b = .62, t(58) = 3.66, p = .001$ ), suggesting that participants who felt more certain about the assigned rating score were more likely to engage future WOM behavior, regardless the rating scale conditions. Thus, H1 is supported. Finally, we examine the proposed conditional indirect effect of rating scale on WOM intention through rating certainty by the approach and SPSS macro (PROCESS Model 8; Hayes (2012)). The results indicated that rating certainty was predicted by the rating scale  $\times$  scale label interaction ( $b = 1.37, t = 1.80, p < .08$ ) and scale label ( $b = -2.89, t = -2.32, p = .02$ ). In addition, WOM was predicted by the rating scale  $\times$  scale label interaction ( $b = .88, t = 1.86, p < .07$ ) and rating score ( $b = .61, t = 11.28, p < .001$ ). When rating certainty is included in the last model to predict WOM, however, the interaction is no longer significant ( $b = .63, t = 1.38, p > .17$ ) while rating certainty remains significant ( $b = .18, t = 2.88, p < .01$ ). Most importantly, the proposed indirect effect of scale effect on WOM through rating certainty was supported since the 95% confidence interval excludes zero (95% CI = .02 to .69). Specifically, the indirect effect is significant in the awful-excellent label condition (95% CI = .02 to .57) but not in the dislike-like label condition (95% CI = -2.66 to .09). This suggests that the effect of rating scale on WOM is fully mediated by rating certainty only in the awful-excellent condition. Thus, H3b is supported.

## Discussion

Overall, the results of Study 3 support H1, H2, H3a, and H3b, suggesting that raters are more likely to engage in WOM communication when they are more certain about the rating score, and rating certainty is a function of rating scale. Importantly, we successfully present a boundary condition by changing scale labels in which raters in the rating task do not consider communication with others but focus on their own attitude toward the product. In this condition, rating scale no longer predicts rating certainty, supporting our theory of product ratings as a form of WOM communication.

In the first three studies, we have shown the rating scale effects on WOM, and the mediation role of rating certainty. We have also provided a boundary condition to moderate the rating scale effect. However, in each of these studies, we have measured rating certainty prior to WOM. One may argue that, as a result, the rating certainty measure may become accessible and, then, biases the WOM responses. If so, our findings may have limited managerial contributions since most product rating tasks do not list a rating certainty question. To test this, in Study 4, we remove the rating certainty question and measure WOM behavior immediately after the product rating task. This approach is therefore more applicable to the real world environment. In addition, in Study 4, we measure WOM in terms of a choice among different communication channels (e.g., Twitter, Facebook) along with a no-sharing option. The results will therefore be more generalizable to other WOM situations where the sharing decision depends not only on audience (e.g., close friends) but also on channels.

## Study 4

## Method

Eighty adults (mean age = 32.6 years; 55.0% female) were recruited from the same online panel as in previous experiments. All participants watched a short music video clip about the musical theme of *Star Wars*, which is considered one of the most popular movies ever in the US. Our choice of the *Star Wars* theme music adds an additional challenge to our analysis as the nature of the stimulus differs from previous experiments in which attitude toward the object was formed upon the consumption. In this experiment, on the contrary, participants may already have an existing attitude which could bias their video sharing behavior. For instance, a *Star Wars* fan may be highly involved in sharing the video because she may belong to a *Star Wars* brand community (Dichter 1966; Muniz and O'Guinn 2001). On the other hand, people who are highly familiar with the movie may find the video lacks novelty and they may hesitate in sharing it as a result (Berger and Iyengar 2013). Thus, we will need to control for participants' familiarity toward, and connection with, the movie.

After watching the 4-minute video, participants were randomly assigned to either the 2-pt or 5-pt rating scale conditions which were anchored as "awful" at the low end and "excellent" at the high end. Next, they indicated whether they would like to share the video via any specific channels -- including Facebook, Twitter, email, others -- or not share it at all. Next we measured *Star Wars* familiarity via three items ("How familiar are you with the *Star Wars* movie", "How familiar are you with the *Star Wars* music", and "To what extent would you identify yourself as a *Star Wars* fan"). Then, consistent with Study 2 and 3, we measured video rating on a 10-pt scale to control for satisfaction. Finally, we collected demographic information.

## Results and Discussion

**WOM Behavior.** To examine whether participants would share the video via any venues, we used a binary logistic regression model with rating scale, rating score, and three movie familiarity controls as the independent variables. As predicted, we found a significant rating scale effect ( $\chi^2(1) = 4.17, p = .04$ ), a significant rating score effect ( $\chi^2(1) = 12.2, p < .001$ ), a significant *Star Wars* movie familiarity effect ( $\chi^2(1) = 5.49, p < .02$ ), and a significant *Star Wars* music familiarity effect ( $\chi^2(1) = 3.99, p < .05$ ). Specifically, the significant rating scale effect show that, while 32.4% of the participants under 5-pt condition decided to share the video, only 18.6% of those under 2-pt condition chose to share. Overall, 33.3% of the participants decided to share the video. Among those participants, 40% chose Facebook, 10% chose Twitter, 25% chose E-mail, and 25% decided other types of sharing channels. These results are further evidence that rating scale could affect WOM likelihood, even when the feeling of rating certainty is not salient to raters.

## General Discussion

Across four studies, this research demonstrates that different product rating scales (e.g., 2-pt scale vs. 5-pt scale) can affect a rater's post-rating WOM intention via rating certainty. As a rater is more confident in the rating score she assigns, she is more likely to transmit WOM in the future. The mechanism we propose for this effect is based on rating certainty, which is a type of certainty belief that reflects raters' confidence regarding the rating score assigned. Rating

certainty differs from other certainty beliefs in the sense that it exists when raters participate in a product rating task which raters consider to be a communication process.

We find robust support for our hypotheses. Studies 1 and 2 demonstrate the basic scale effect on WOM, mediated by rating certainty. Specifically, participants show higher rating certainty under a 5-pt scale condition than under a 2-pt scale condition, and subsequently indicate higher WOM intentions. Studies 1 and 2 also rule out two alternative explanations - attitude certainty and self-efficacy, neither of which is affected by the choice of rating scale. Study 3 offers a boundary condition in which the scale effect is attenuated by changing the scale label to focus on *product attitude* (e.g., How would you rate the product from dislike to like), instead of *evaluating their experience* (e.g., How would you rate the product from awful to excellent). We suggest that the former question, compared to the latter one, is less likely to be interpreted as a social activity in which raters see the rating process as a form of communication. Finally, Study 4 provides further evidence that even when rating certainty is not made salient (e.g., no rating certainty question at all), the rating scale can still affect WOM behavior. Our findings not only demonstrate a novel and exciting phenomenon, but they also highlight the importance of rating certainty in driving WOM behavior.

### Theoretical Implications

This article is the first to investigate how a product review process can affect consumers' subsequent WOM behavior. Although research has demonstrated how social network structures, individual involvement, and conversation content could lead to ongoing WOM communication, it is unclear what actions practitioners may take to affect these drivers in order to encourage

consumers to keep spreading WOM. This article introduces a new marketing construct, rating certainty, and shows its role in driving WOM behavior. Our findings do not appear to be explained by attitude certainty or self-efficacy.

Our explanation for the rating certainty effect relates to the literature on general certainty effects, which suggests that when a belief is held with more certainty, the belief is more likely to predict behavior that is associated with that belief (Fazio and Zanna 1978). Conceptually, rating certainty differs from general certainty belief or attitude certainty in the sense that rating certainty is the certainty belief attached to a rating behavior, rather than an attitude object. Therefore, consumers' certainty belief toward the product attitude is different from their certainty belief toward the product rating score assigned. We further demonstrate the distinction by showing how rating certainty is a function of rating scale, while attitude certainty is not. Taken together, we suggest that rating certainty should be considered a meaningful and distinct construct for further investigation.

Importantly, we suggest rating certainty as a new antecedent of WOM behavior and it is not a typical "motivation" for WOM. Most WOM research, for example, studies WOM senders' motivations (Ditcher 1966; Wojnicki and Godes 2012 ) or WOM sender-receiver relationships (Ryu and Feick 2007) to explain the occurrence of WOM. Past research has not paid attention to how a WOM communication process (e.g., reviewing a product) can impact future WOM behavior. Our focus on the product reviewing process further enriches our understanding of when and how WOM may take place. Finally, we believe that our results have implications for researchers interested in studying marketing strategies for generating WOM. For instance, while Moore (2012) studies the impact of WOM language on future WOM, it is relatively difficult for managers to change the language consumers use. Similarly, following Berger and Schwartz'

(2011) finding that products that are frequently cued environmentally are more likely to be discussed over time, managers may attempt to boost WOM by investing in a marketing campaign to make the marketing message more connected to the surrounding environment. Our findings suggest a low-cost marketing strategy to boost future WOM by enhancing consumers' certainty belief about the product review process.

### Managerial Implications

This article offers several important managerial implications. Our conceptualization of rating certainty highlights the importance of considering how consumers experience and perceive the product rating process. Specifically, managers should consider ways to enhance rating certainty levels during a product rating task. Although we suggest the rating scale as a way to affect rating certainty, there are other factors that might also boost a rater's feeling of rating certainty. First, consumers feel more certain about their task decision when the task is perceived as easy (e.g., fluency effect; Schwarz et al. 1991). This suggests that an “easier” product review process may lead to higher levels of future WOM. Asking a product review question that consumers are not able to answer with confidence may lower the intention of engaging in ongoing WOM. Second, question order may affect overall rating certainty as well. For example, consider a product review consisting of two parts- a product review (more complicated) and a product rating score (easier part). Managers may benefit from starting with the complicated section followed by the easier section (e.g., product rating). Once consumers have completed the product review part, they may have a better idea of how to rate the product subsequently, making their certainty belief higher.

Third, since rating certainty is a function of question wording or scale labeling, managers should select questions that help consumers feel confident. In our Study 3, we show that even holding scale point constant, the scale label may affect one's rating certainty belief (e.g., dislike/like vs. awful/excellent). In practice, managers have many choices in the rating task, including picking the number of scale points, the labels assigned to the scale points, and the wording of the review question. If the review question requires substantial recall activity, choosing an easy-to-respond-to scale could become even more important in enhancing rating certainty. For instance, when asking a consumer to review a product that was purchased one year ago, compared to a product purchase one month ago, firms may want to adopt different product review questions since the former may be much more difficult to recall the consumption experience. Managers should aim at designing review questions with which consumers would feel comfortable and confident. Detailed purchase questions such as "where did you purchase", "when did you purchase", or "how much did you pay for it" might be avoided, for example. Instead, managers could ask consumers to rate their most recent usage experience for the product because it is highly accessible and it is easier to recall.

Finally, managers should realize that WOM intention can be triggered by confident product rating experience. As our studies demonstrate, when consumers are lacking confidence about their rating score, they are less willing to share the video link with their friends. Thus, managers need to be careful when asking consumers to fill out product review or satisfaction survey, as certain questions and process may suppress future WOM behavior.

## Limitations and Future Research

We have examined rating scale as the source of rating certainty. However, there might be other sources of rating certainty as well. For instance, will the timing of offering product review affect rating certainty? Holding experience constant, will rating right after the completion of consumption lead to the same rating certainty level as rating 1-year after the consumption? Of course, one challenge in such a study may be that attitude certainty may differ in these two conditions as well.

Product expertise may be worth investigating as a potential moderator of the scale effect on rating certainty. For instance, it is likely that an expert who has superior knowledge and experience about the product may have no difficulty mapping her product evaluation onto any rating scale. She knows the product performs well, so she knows it should be rated as 4 out of 5, 13 out of 15, and 80 out of 100, without hesitation. If this is the case, then we can expect high expertise will attenuate our main findings. In addition, given the abundant online data, it would be useful to collect empirical data across websites that adopt different rating scale points and to examine whether there is a difference in the amount of associated WOM. For example, will a movie review website using 5-pt rating system induces more comments than another movie review website that adopts a 2-pt rating system? Of course, such a study would require researchers to control for the myriad observed and unobserved differences across these sites. Ideally, an natural experimental setting might be identified in which a rating scale was changed, allowing the researcher to study the differences before and after the shift.

Finally, this article primarily focuses on just two types of rating scales: 2-point and 5-point. It is unclear the extent to which our findings would generalize to an arbitrary number of scale points and the relationship with rating certainty. Future research might explore more broadly and more generally this relationship. We offer the conjecture that rating certainty and

scale points may be linked via an inverted-u shaped relationship in which more points lead to more certainty (as we've shown) initially but eventually the effect may reverse.

## APPENDICES

### Appendix A1: WOM Questions (Study 2)

1. If you are having a conversation on digital recorder with your friends, how likely would you tell them about this Sony digital recorder? (1: Not at all likely; 7: Extremely likely)
2. If you are having a conversation on digital recorder with a close friend or family member, how likely would you tell him/her about this Sony digital recorder? (1: Not at all likely; 7: Extremely likely)
3. If a friend tells you that (s)he is considering buying a new digital recorder and asks for your advice, how likely would you be to tell your friend about this Sony digital recorder? (1: Not at all likely; 7: Extremely likely)

### Appendix A2: General Self-Efficacy Scale (Study 2)

Please tell us your level of agreement with the following statements (1: Not at all true; 2: Hardly true; 3: Moderately true; 4: Exactly true)

1. I can always manage to solve difficult problems if I try hard enough.
2. If someone opposes me, I can find the means and ways to get what I want.
3. It is easy for me to stick to my aims and accomplish my goals.
4. I am confident that I could deal efficiently with unexpected events.
5. Thanks to my resourcefulness, I know how to handle unforeseen situations.
6. I can solve most problems if I invest the necessary effort.
7. I can remain calm when facing difficulties because I can rely on my coping abilities.
8. When I am confronted with a problem, I can usually find several solutions.
9. If I am in trouble, I can usually think of a solution.
10. I can usually handle whatever comes my way.

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