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# Which reviews carry the most weight? The influence of message and source factors in online word-of-mouth messages

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**Which reviews carry the most weight? The influence of message and source  
factors in online Word-of-Mouth messages**

by

**Xiaowen Zhu**

A thesis submitted to the graduate faculty  
in partial fulfillment of the requirements for the degree of  
**MASTER OF SCIENCE**

Major: Journalism and Mass Communication

Program of Study Committee:  
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Kevin Blankenship

Iowa State University

Ames, Iowa

2015

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## ABSTRACT

Online reviews are one example of electronic word of mouth messaging (eWOM), which research has shown plays an important role in purchasing decisions for consumers. Yet most eWOM research has ignored the potential effect of specific message and source features within the messages themselves. This study used a narrative lens to explore how the presence of a similar and explicitly identified character influences perceived trustworthiness of the reviews, as well as overall attitudes and purchase intention toward products. A mixed design experiment was conducted to test effects of character presence, as well as types of appeal, positive and negative valence, and product involvement in online review messages. Character presence was found to increase perceived trustworthiness and brand attitudes, but only for low-involvement products. Rational appeals and negative valenced reviews were also seen as more trustworthy, yet these main effects were complicated by a three-way interaction that suggests the effects of message features in eWOM reviews are complex and require more research to explore their nuances.

*Keywords:* eWOM, message and source, persuasion, character, appeal, valence

## CHAPTER I

### INTRODUCTION

Without trying products physically before purchase, new customers often question the quality of product descriptions provided by online marketers. To reduce this uncertainty, people tend to search for reliable guidance and evidence to compensate for the lack of previous experience. As people's information-related behaviors have been influenced and altered by the digital media, consumers often turn to online word-of-mouth (eWOM) to fill this need. As marketers found that more evaluations and higher ratings could attract more attention, they now often encourage their customers to share their evaluation and experience as an additional marketing strategy (Schmallegger, & Carson, 2008). Furthermore, eWOM has been found to even influence consumers' offline decisions as well (King, Racherla, & Bush, 2014).

Compared to the traditional word-of-mouth (WOM), the characteristics of eWOM are defined as "any positive or negative statement made by potential, actual, or former customers about a product or company, which is made available to a multitude of people and institutions via the Internet" (Hennig-Thurau, Gwinner, Walsh, & Gremler, 2004, p.39). eWOM helps organizations collect feedback from consumers on a large scale faster and with minimal cost. eWOM also identifies new trends of online interactive communication, yet also requires more complex marketing skills due to the shift of consumers' role from passive to active (King et al., 2014). Therefore, eWOM has attracted considerable attention among professional practitioners in attracting attention among academic researchers in various fields for better understanding its role in marketing.



However, most academic studies thus far that have examined eWOM focus on either the antecedents of eWOM communication, such as why consumers choose to write eWOM reviews, or on their consumption, such as why people trust eWOM and the effects on purchasing factors (King et al., 2014). As identified in a recent meta-analysis on eWOM research, few studies have focused on the actual message features present in eWOM reviews and how they influence the perceived trustworthiness, brand attitude and purchasing intention variables (Racherla, & King, 2012).

The purpose of this study is to begin to address this gap by examining the influence of particular message and source factors within eWOM messaging. Specifically, this study will explore the role of explicit character description within online review messages, the most common form of eWOM messages, and their interactions between other relevant message-level factors. Because online reviews normally present information as first person storytelling, the role of the author as an identifiable character may play an important role. Studies into narrative processing support the importance of characters identification and emotional empathy on influence of storytelling. Yet, this role of characters has so far been overlooked in eWOM studies (Racherla, & King, 2012). It is expected this study could contribute to the theoretical understanding of persuasive communication in the digital age, as well provide a pragmatic understanding of eWOM impacts for marketers who want to use eWOM for profit as well as managing better relationship with their customers.

## CHAPTER II

### LITERATURE REVIEW

#### **Research into EWOM**

The main purpose of marketing is to persuade consumers to believe or behave in ways that benefit the organization. Yet, from former experiences involving marketing, consumers gain knowledge of marketing tactics, defined as “persuasion knowledge,” which influences their reaction to future marketing (Rodrigue, 2006). Friestad and Wright (1994) proposed the Persuasion Knowledge Model to explain how people cope with persuasive messages using knowledge they learned from previous exposure to persuasive attempts. This theory suggests that in general, people are resistant to persuasion if the persuasive intent is obvious. Research affirms that awareness of persuasion intent in traditional marketing, such as in commercial advertisements or even in hybrid forms such as product placement or testimonials, influence the reaction and resistance of consumers (Rodriguez, 2006).

eWOM is defined as “any positive or negative statement made by potential, actual, or former customers about a product or company, which is made available to a multitude of people and institutions via the Internet” (Hennig-Thurau et al. 2004, p.39). Research confirms the persuasive effects of eWOM on both purchase decision-making and post-purchase perception (Matos & Rossi, 2008; Sweeney, Soutar & Mazzarol, 2008) as well as on reputation of organization (Park & Lee, 2009). eWOM was found to be more relevant and trustworthy than traditional marketing such as commercial ads and campaigns (Bickart, 2002; Chevalier & Mayzlin, 2006; Christodoulides, Jevons, & Blackshaw, 2011; Park, Lee, & Han, 2007) as people tend to trust eWOM from unknown individuals more than information

provided by traditional media (Cheung & Thadani, 2012).

However, even with such strong persuasive effects, eWOM is generally not perceived by either its creators or consumers as persuasive communication. One strand of research on eWOM has investigated consumers' motivations for creating eWOM messages and finds motivations of self-enhancement or altruism emerge, but not ideas of persuasion. Wojnicki and Godes (2011) report that products that already have numerous positive reviews are more likely to attract more reviews, since posting experiences in their reviews is considered as a way for individuals to support their own expertise. Furthermore, while less experienced reviewers tend to follow the popular opinion, those who believe they are more experienced relative to particular products would purposefully post slightly different reviews to stand out (Moe & Schweidel, 2012). Other factors that also correlate with WOM transmission behavior include opinion leadership and innovation (Sun, Youn, Wu, & Kuntataporn, 2006), self-efficacy (Gruen, Osmonbekov, & Czaplewski, 2006; Huang, Lin, & Lin, 2009), and individuation (Ho & Dempsey, 2010). For example, Gruen et al (2006) conducted a survey of 650 users of Internet forums and concluded that the relevance, interest, and the ease of engagement correlated most with intentions to create eWOM messages. Another survey of college students conducted by Ho and Dempsey (2010) find a strong positive correlation between individuation (willingness to stand out to make their voice heard in public or in a community) and the intention to generate and transmit eWOM messages.

Additionally, altruism, defined as a motivation to “help other consumers with their buying decisions, to save others from negative experiences, or both” (Hennig-Thurau et al, 2004, p.42), have been widely tested and accepted as one of the most important motivations for reviewer creation of eWOM and the reason why consumers perceive eWOM as helpful.

For example, Dellarocas (2003) found that individuals are more likely to post a movie review if they perceive a higher level of disagreement with professional critics, to provide a more accurate portrayal of their experience. These findings confirm the assumption that the motivations that drive eWOM creation differ from general persuasive communication. As such, eWOM is often perceived as higher credibility compared traditional ads and official reviews.

A second strand of research examines the other end of eWOM messages – namely their consumption, such as why people read and adopt eWOM messages. The primary reasons for seeking eWOM include saving evaluation efforts during information seeking, risk reduction, and social assurance (Dabholkar, 2006; Goldsmith & Horovitz 2006; Sweeney, Soutar, & Mazzarol, 2008). However, eWOM is only considered as secondary source of information that needs to combine with other sources. Bronner & deHoog (2010) found consumers rely on multiple sources when seeking information for reducing risks and that different sources are given different weights for various purposes. For example, in a hedonic context, or one focused on enjoyment instead of function, eWOM is given greater weight if the reviewer has high background similarity and greater expertise in hedonic condition, whereas in more utilitarian contexts, or ones focused on function, editors of online magazine are given more trust (Smith, Menon, & Sivakumar, 2005). By further testing the reasons identified by earlier researchers, later studies showed that the reasons for eWOM adoption varied across gender, expertise, and type of product (Mudambi & Schuff, 2010; Kim, Mattila, & Baloglu, 2011).

This variation suggests that it is not sufficient to only focus on these two strands of research. While the antecedents of eWOM creation and outcome of its consumption are

important aspects of eWOM messages, what remains understudied is the content of the messages themselves. A recent meta-analysis of Racherla, & King (2012) notes this gap in the literature and discusses the few studies that have begun to examine this content aspect of eWOM messages.

The positive or negative valence and quantity and quality of eWOM messages are the message-related variables most studied so far (King et al., 2014). Regarding valence, the influence of negative reviews seems to be more significant and salient compared to positive reviews (Ba & Pavlou, 2002; Chevalier & Mayzlin, 2006). Regarding the quantity of reviews, Davis and Khazanchi (2008) analyzed data from a shopping website and concluded that there is no significant effect of the number of reviews on product sales unless it is combined with other features of products, such as category or popularity. If quantity is instead defined as the number of words in a review, Mudambi and Schuff (2010) tested the proportion and amount of the reviews from Amazon.com, and found the amount of text in reviews was correlated to the helpfulness and that moderate reviews were perceived as most helpful. The quality of eWOM messages are nebulous to define, yet studies using relevance, timeliness, accuracy, comprehensiveness, and the strength of argument in experimental settings as measures of quality found that they related to enhanced the credibility of eWOM and influenced consumers' product attitude and purchasing intentions (Parker et al, 2007; Lee et al, 2008; Cheung, Luo, Sia & Chen, 2009). Additionally, the impact of writing styles and language was found to also influence the persuasive effects (Archak, Ghose, & Ipeiritis, 2011).

While these studies have begun to explore message-level factors that may influence the persuasive effect of individual eWOM messages, many theoretically relevant factors have

yet to be explored and almost no studies have examined the potential interactions between these message and source factors. Therefore, this study will address this gap in the literature by introducing a factor relevant to narrative processing theories and exploring its interaction between other message and source factors of eWOM identified in the literature. The link to narrative processing will first be discussed followed by the additional factors.

### **Narratives on Persuasion**

Although eWOM messages can differ greatly in content, they normally all present information as first person storytelling. This suggests a connection with other areas of literature that explores the impacts of storytelling on audiences.

The field of narrative persuasion explores how narrative formats of communication are processed differently than expository or argumentative messages, and generally find that narrative stories are strong at mitigating resistant attitudes and leading to persuasive outcomes (Moyer-Guse & Nabi, 2010). The transportation-imagery model describes the effect of storytelling on persuasion (Green & Brock, 2000). The authors define “transportation” as a cognitive state of absorption into a story, focusing on emotional involvement, identification with characters and the generation of mental imagery, that makes it more likely that audiences accept the persuasive message of the story (Green 2006; Green & Brock, 2000). This model has been tested in a wide variety of contexts, including interactive video games (Baranowski, Buday, Thompson, & Baranowski, 2008), social media (Van Laer and de Ruyter, 2010), educational content in entertainment (Moyer-Guse, 2008), and reality TV shows (Ha, 2008). Escalas (2004) found that increasing the perceived realism of a story could result in better mental imagery, leading to transportation and persuasion (Escalas, 2004; Petrova and Cialdini, 2005). Similarly, vividness and perceived relevance can

also enhance elaboration of details and lead to longer-lasting memory (Keller and Block, 1997). Through these cues, storytelling was found being processed through readers' subject feelings and emotion such as empathy (Deighton, Romer, & McQueen, 1989).

A few recent studies within advertising also find favorable effects of stories on consumers' attitude, mood, and behaviors (Demangeot & Broderick, 2006) and suggest they are likely to evoke consumers' feelings on products (Frost, Chance, Norton, & Ariely, 2008). Compared to other forms of marketing, narrative reviews contribute to a positive experience and favorable attitudes, even towards the advertisement itself (Kozinets, 2010; Keng, Ting, & Chen, 2011).

Among many of these antecedents, identifiable characters are highly relevant to narrative processing as the audience must understand the experience by knowing and feeling in similar ways (Escalas & Stern, 2003). Therefore, specific characters are essential as transportation relies on identification and empathy toward characters' beliefs and emotions. The influence of characters as a factor within narrative persuasion have been found in various contexts, such as healthy eating habits (Slater, Buller, Waters, Archibeque, & LeBlanc, 2003), and women's violent behavior engagement (Greenwood, 2007).

In fact, the importance of specific people as a source of information has been explored within traditional WOM. According to Taylor (2010), the source of the WOM message is often perceived by consumer as coming from authentic and reliable characters, which help mitigate the resistance of persuasion intention from marketers. High expertise and less obvious persuasive intent are critical for the perception of source credibility (Smith et al., 2013). Because WOM is generated from third parties whom are perceived as having less persuasive intention but enough expertise in the product to have an opinion, WOM is

perceived as more reliable than other persuasive messages created by marketers (Strutton, 2010). Similarly, Ziegele and Weber (2014) found that single customer's narrative review shows stronger effects in eWOM contexts than aggregate review scores on online shoppers' evaluation toward products.

This aligns with the larger literature on source credibility in general such that much effect of a message depends on the perceived factors of the source providing the message. For instance, expertise, trustworthiness, attractiveness, and perceived similarity between source and recipient have been found to strongly influence purchase intentions and attitude toward brands across different contexts (Jain and Posavac, 2001; Yoon, Kim & Kim, 1998; Wasserman & Kassinove, 1976). A review article looking at source effects over the past few decades catalogues interactions among these source factors as well as with other variables, such as use of evidence, message discrepancy and argument quality (Pornpitakpan, 2004). In sum, how an audience perceives a source will color any influence of the message itself.

However, eWOM differs from traditional WOM due to the uncertainty of the source. Although peripheral information may be recognizable in online contexts, consumers are still less able to assess the personal dimensions of the reviewer unless those dimensions are explicitly stated. While previous research has found that eWOM coming from individuals of high background similarity leads to greater influence (Smith et al, 2005) no research has examined the importance of whether a specific character is identified or not within the eWOM message. Because characters are important within narrative processing the following hypothesis is proposed:

H1: Online review messages that explicitly describe its author as having a similar background to the audience will result in (H1a) greater trust, (H1b) greater influence on



brand attitudes and (H1c) greater influence on purchasing intention than online review messages with no described author.

The presence or absence of these described characters will also be explored through interactions with other relevant factors within an online review context.

### **Rational vs. Emotional Appeals**

eWOM messages often differ on the type of message appeal used. eWOM messages that arouse the feeling of fear, guilt, anger or happiness are often defined as emotional eWOM messages, while eWOM about facts, data or numbers are often defined as informational or rational eWOM (Eastin, 2010). Wu and Wang (2011) tested these types of appeals and found that the rational appeal message leads to better brand attitudes. However, Tal-Or and Cohen (2010) found that emotions and feelings such as empathy and affinity towards the identified character are involved when people identify with and are transported into narratives. It has been suggested that emotional responses might be a necessary component for transportation into narratives, and influence the attitude and cognition (Murphy, Frank, Chatterjee, & Baezconde-Garbanati, 2013). Since identifying with characters within narratives is often processed emotionally, there might be a positive interaction between these two factors. Therefore, the following hypothesis proposed:

H2: Online review messages will interact with appeal type such that messages that align character / emotional or no character / rational will result in greater trustworthiness than other combinations of online review messages.

### **Positive vs. Negative Valence**

The positive or negative valence of eWOM messages is important because they are often associated with the level of satisfaction of reviewers (Anderson, 1998; de Matos & Rossi, 2008). However, researchers differ in their conclusions on the direction of influence. Many earlier researchers suggested negative reviews have a stronger impact on consumers' decision-making than positive ones (Arndt, 1967; Mizerski, 1982; East, Hammond, & Wright, 2007). Arndt (1967) asserted unfavorable WOM is more effective in changing purchase intention and Mizerski (1982) found similar conclusions that negative information leads to stronger belief strength and affect. Similarly, East et al (2007) claimed since negative reviews are less common, they exhibit more power to influence. In contrast, more recent studies found evidence that positive eWOM had greater influence. Schindler and Bickart (2002) found that reviews with more detailed information and less negative information were perceived as more valuable. The results of Sweeney et al. (2012) also found that positive eWOM message showed stronger effects on consumers' willingness to adopt services. To complicate the picture, Lee, Rodgers, & Kim (2009) found that extremely negative showed the strongest influence, however moderate reviews were perceived as the most reliable. Because the direction of influence is unclear, the interaction between characters in eWOM messages and valence will be explored with the following research question:

RQ1: How with the positive or negative valence of online review messages interact with the presence of an explicit character to influence trustworthiness?

### **Involvement In Product Categories**

Product involvement is not a message-level factor within eWOM, but represents a variable that has been found to influence how and why consumers seek out and process

eWOM. Product involvement refers to the perceived importance of a product to an individual, and results suggest that the higher psychological or economic risk involved in purchasing a product, the more the consumer would search for eWOM information as reliable source (Wangenheim and Bayon, 2004). Similar research outside of WOM studies suggest similar conclusions, such that consumers with a high degree of product involvement tend to look for related information actively whereas consumers with low product involvement do not (Zaichkowsky, 1985; Brooker, 1981; Roberson, 1976).

Wu and Wang (2011) assert that the level of product involvement also moderates the influence of the message appeal type. Specifically, consumers with high involvement would prefer to focus on rational appeals, while consumers with low involvement would prefer to focus on emotional appeals. Yet, the interaction of specific characters on the differences between levels of product involvement remains untested. Therefore, this interaction will be explored with the following research question:

RQ2: How will product involvement influence the (RQ2a) trust, (RQ2b) brand attitudes and (RQ2c) purchasing intention?

RQ3: What three-way or higher order interactions further explain the role of message and source factors in eWOM on trustworthiness?

## CHAPTER III

### METHODS

#### **Subjects**

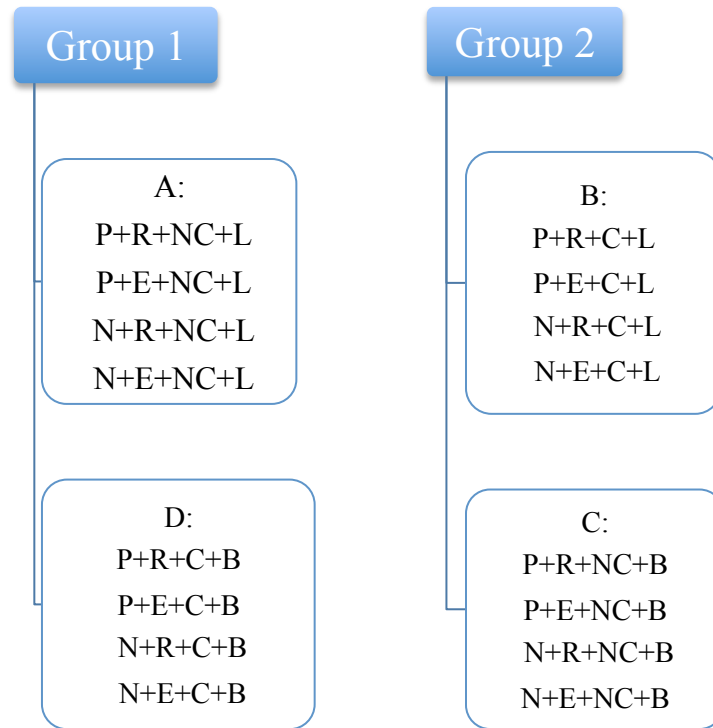
Undergraduate communication students at Iowa State University received extra credit for participating in a 15-minute online survey in July of 2015. After excluding participants who didn't complete the study, the valid sample size was 56. The average age was 21 (SD = 1.90), and 42% were female.

#### **Procedures and Experiment Design**

A 2 (rational vs. emotional appeal) \* 2 (positive vs. negative) \* 2 (high vs. low involvement) \* 2 (identified similar character vs. no identified similar character) mixed design experiment was conducted.

Participants were told to imagine they were interested in buying a certain product type and were then given a description about a specific product of that type and were provided with four eWOM reviews displayed in a randomized order. They were then asked to rate the trustworthiness of each of the four reviews and report their overall attitude and purchase intention about that product. Each participant evaluated two products in this way, one each for high vs. low involvement. The identified character factor was crossed with the involvement factor creating two groups – for one group, the high involvement product showed reviews all with a similar character while the low involvement product showed reviews all with no character and the second group reversed this pairing. The remaining factors, appeal type and valence, were counter balanced within each product, such that the four reviews for each product contained one review combining these two factors in each

combination, and this remained the same across the two groups, as seen in Figure 1. Finally, additional scales and demographics were collected (See Appendix A and B for more information on stimuli materials and questionnaire). This study has been reviewed and approved by the Iowa State University Institutional Review Board (See Appendix C).



*Notes: P: Positive, N: Negative; R: Rational, E: Emotional; C: Identified Character, NC: No Identified Character; L: Laptop as High Involvement Product, B: Backpack as Low Involvement Product.*

**Figure 1.** The Grouping of the Mixed Experiment Design

### Stimuli Materials

Sixteen online reviews written by previous consumers were selected from Amazon.com, and slightly modified to address the relevant factors in this study. According to the literature on the quantity of eWOM, both the number of posts and the length of the text can influence the variables of interest and so need to be controlled. Therefore, the number of sentences within each review as well as the overall number of reviews were kept equal within

and across each product. Prior literature also suggests that background similarity influences the impact of reviews. Therefore, the reviews that emphasize specific characters identified themselves as college student to match the sample used for this study. For the characters in the reviews, the gender was kept ambiguous to control for possible additional source effects. The specific manipulations are described in turn.

## **Independent Variables**

### **Identified similar character**

Reviews with an identified similar character have the author self-identify as a college student within their review. Reviews with no identified similar character offer no author description.

### **Type of appeal**

Rational appeals emphasize the functional benefit of the product whereas emotional appeals emphasize feelings or a related atmosphere to create the general impression related to emotion (Kotler & Keller, 2008). Reviews emphasizing the rational appeal focus on the product's function, benefit, and value while reviews emphasizing the emotional appeal focus on feelings and emotions surrounding its use.

### **Valence**

In this study, valence is operationalized at the individual post level. Because all treatments saw an equal number of positive and negative reviews, there are no differences on the overall valence toward any product. Positive valence is expressed through explicit statements such as, "I recommend this product" or "I'm satisfied/happy with this product"

whereas negative valence is expressed through opposite such statements, such as “I won’t recommend this product” and “I’m upset/dissatisfied with this product.”

### **Product involvement**

Involvement is defined as the level of importance placed on particular products. Because undergraduate students comprise the sample, two products were chosen to represent low and high involvement for this audience. Specifically, the high-involvement product was represented by a laptop and low-involvement was represented by a backpack. These products also permit the manipulation of character as the absence of any author information does not necessarily imply a student reviewer.

All reviews are provided in Appendix A to show how each manipulation combined to create specific reviews.

## **Dependent Variables and Controls**

### **Trustworthiness**

Trustworthiness is defined as the extent of acceptance and confidence in the content of a review (Ohanian, 1990). In this study, trustworthiness was captured by asking participants to rate each of the four reviews for each product on a 1-5 scale on how trustworthy and/or influential they considered each review ( $M=3.34$ ,  $SD=2.21$ ). In addition, participants were asked to describe in an open-ended question the reason for rating their top and lowest ratings.

### **Attitudes toward product/brand**

Product/brand attitudes are defined as brand trust and affect toward the product. This research uses the questions of Spears & Singh (2004), which asks for self-reported

descriptions about the product being unappealing/appealing, bad/good, unpleasant/pleasant, unfavorable/favorable, and unlikable/likable, each on a five-point scale. The items were combined into scales for each product. Because each scale was mixed with other factors, reliability tests were run for this measure within each possible group, and all were reliable, (all  $\alpha > 0.98$ ).

### **Purchase intention**

Purchase Intention refers to the willingness of a consumer to purchase an item. This research again follows Spears & Singh (2004), which asks for self-reported descriptions about purchasing the product as, never/definitely, definitely do not intend to buy /definitely intend, very low/high purchase interest, definitely not buy it/definitely buy it, probably not/probably buy it, again each on a five point scale. The items were combined into scales for each product. Because each scale was mixed with other factors, reliability tests were run for this measure within each possible group, and all were reliable, (all  $\alpha > 0.98$ ).

### **Resistance to persuasion**

Resistance to persuasion refers to the individual differences in the personality attributes or aspects related to propensity of being persuaded (Brinol, Rucker, Tormala, & Petty, 2004). The scale used in this study is a list of sixteen questions that ask for self-measurement about personality about resistance, each on a five-point scale as extremely uncharacteristic of you to extremely characteristic of you. The scale was reliable, ( $\alpha = 0.74$ )



## CHAPTER IV

## RESULTS

One-way ANOVAs were conducted in SPSS involving the factors divided by the groups and repeated measure ANOVAs for effects tests of all within-subjects factors and interactions. Reliability tests and the complete results are shown in Tables 1, 2 and 3. Resistance to persuasion and gender were controlled for all analyses. Because these factors were not significant, they were dropped from the repeated measures tests to simplify the analysis.

#### Identified Characters with Similar Background.

H1 predicted that online reviews with a similar identify character would result in greater trust, greater influence on brand attitudes and greater influence on purchasing intention than online review messages with no described author. For the low involvement backpack, trustworthiness was significantly greater for the reviews with an identified character ( $M = 14.27, SD = 0.35$ ) than those with no characters ( $M = 13.28, SD = 0.34$ ) ( $F(1,50) = 4.04, p = .05$ ). Attitude was also significantly greater for the reviews with an identified character ( $M = 3.18, SD = 0.15$ ) than those with no characters ( $M = 2.66, SD = 0.15$ ) ( $F(1,50) = 5.83, p = .02$ ). There was no significant difference of purchase intention between identified character ( $M = 2.63, SD = 0.16$ ) and no characters ( $M = 2.36, SD = 0.15$ ) ( $F(1,50) = 1.55, p = .22$ ) for the low involvement product.

For the high involvement laptop, there were no significant differences on either trustworthiness ( $F(1,50) = 0.08, p = .78$ ), attitude ( $F(1,50) = 0.50, p = .48$ ) or purchase intentions ( $F(1,50) = 1.39, p = .25$ ). In sum, the hypothesis was partially supported.

### **Appeal: Rational vs. Emotional.**

H2 predicted an interaction between appeal type and character presence, such that messages that align character / emotional or no character / rational would result in greater trustworthiness than other combinations of online review messages. However no significant interaction was found ( $F(1,54) = 1.57, p = .22$ ).

Post-hoc tests on the main effect of appeal type found a significant effect of appeal ( $F(1,54) = 8.78, p = .01$ ) such that trust of rational appeals in online reviews ( $M = 3.5, SD = 0.07$ ) are greater than those of emotional appeal ( $M = 3.18, SD = 0.08$ ).

### **Valence: Positive vs. Negative.**

RQ1 asked if there would be a valence by character interaction on trustworthiness, however no significant interaction was found ( $F(1,54) = 0.71, p = .40$ ). Post-hoc tests on the main effect of valence found that the trustworthiness of negative online reviews ( $M = 3.47, SD = 0.09$ ) were significantly higher than the positive reviews ( $M = 3.21, SD = 0.07$ ) ( $F(1,54) = 4.76, p = .03$ ).

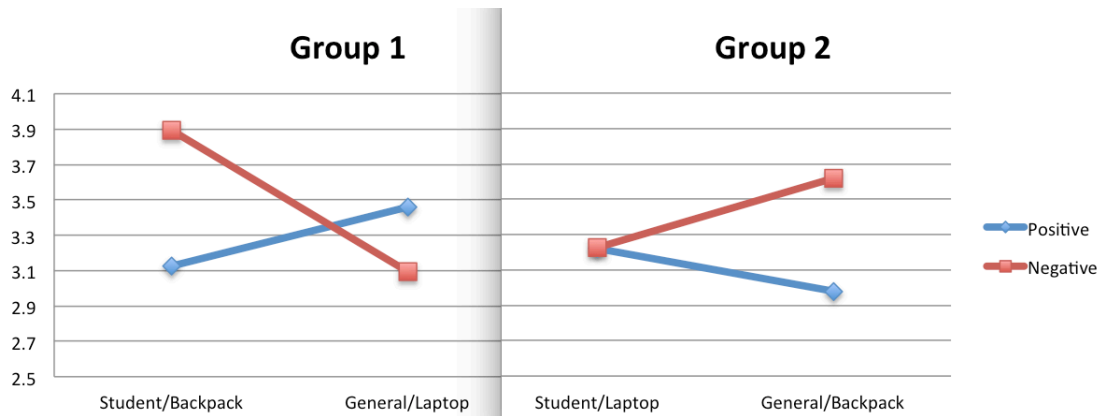
### **Product Involvement.**

RQ2 asked how product involvement would influence the trust, brand attitudes and purchasing intention. Results of one-way ANOVA show the trustworthiness of online reviews about the low-involvement backpack ( $M = 14.28, SD = 0.42$ ) was significantly higher than reviews about the high-involvement laptop ( $M = 12.99, SD = 0.41$ ) in reviews with identified characters ( $F(1,50) = 4.78, p = .03$ ). However, there were no significant differences in attitudes ( $F(1,50) = 0.58, p = .58$ ) or purchase intention ( $F(1,50) = 0.43, p = .51$ ).

However, across the reviews with no character, the purchasing intention for the high-involvement laptop ( $M = 3.08$ ,  $SD = 0.14$ ) was significantly higher than the low-involvement backpack ( $M = 2.33$ ,  $SD = 0.14$ ) ( $F(1,50) = 14.55$ ,  $p = .00$ ). There were no significant differences in trustworthiness ( $F(1,50) = 0.06$ ,  $p = .81$ ) or attitudes ( $F(1,50) = 1.10$ ,  $p = .30$ ).

### Interactions.

RQ3 asked about possible higher-order interactions, and the only significant relationships is a three-way interaction of identified character\* product involvement\* valence ( $F(1,54) = 8.68$ ,  $p = .01$ ). As seen in Figure 1, the influence of valence was greatest in the presence of an explicit student character but differed by product involvement.



**Figure 2.** Three-way Interaction between Valence, Character and Product Involvement

Group 1 read reviews that paired the low-involvement backpack with similar student character and high-involvement laptop with no character. For this group, valence had a greater influence on the trustworthiness of the reviews when the student character was reviewing the low-involvement backpack, with negative reviews being seen as more trustworthy. However, positive reviews were seen as more trustworthy when no specific character reviewed the high-involvement laptop. Group 2 read reviews that paired the low-

involvement backpack with no character and high-involvement laptop with similar student characters. In this group, the relationship is quite different, such that the influence of valence only mattered with reviews without identified characters for the low-involvement laptop, again more trusted when the review was negative. In sum, valence had a greater influence for the low-involvement product regardless of character presence, but character only influenced this relationship for the low-involvement product.

## CHAPTER V

## DISCUSSION

The aim of this study was to document the relationship between specific message and source features of eWOM online reviews and their perceived trustworthiness and ability to influence brand attitudes and purchase intentions. Specifically, the study explored the roles of identified characters, type of appeal, valence and product involvement.

Having a clearly identified and similar character present within a eWOM review led to increased trustworthiness and more influence on brand attitudes, but only with the low-involvement product. An identifiable character had no influence on any dependent variable for the high-involvement product. This somewhat aligns with previous literature but suggest that its influence is sensitive for certain types of products. It is possible that due to the seriousness of considering a high-involvement product, similarity becomes more complex, being conceptualized as a similar need or focus instead of simply a similar identity. Looking at the qualitative descriptions of why participants rated the reviews as they did lends support to this possibility. Some participants noted that they looked for more professional and technical analysis regarding the laptop rather than pure experiences from their fellow students.

Main effects of appeal type and valence were also found, showing negative reviews are seen as more trustworthy than positive reviews, which is consistent with most previous research. Rational appeals were seen as more trustworthy than emotional appeals, which offer some new insight as previous literature has been conflicted on the effects of appeal types. However, the results fail to support H2 that emotional reviews paired with identified

character might be more influential win out due to narrative processing. One possible explanation might be due to an overall perceived limitation of emotional appeals, especially for the high-involvement product. The qualitative descriptions again can help provide context to this possibility. For instance: “Other peoples’ opinions about the laptop that are not measurable or based on functionality or comparisons are disregarded by me”; and “Reviews with lots of technical information were more important to me and I am more concerned with the technical specifications of a laptop”; “This review was least influential to me because it didn't give much detail about the laptop itself.” Likewise, sometimes the emotional appeals seemed false; “It feels almost fake. Almost like a PR professional wrote the review just to boost sales”.

However, the picture gets more complex when comparing differences in product involvement. First, when specific characters were present, the reviews for low-involvement products were trusted more than those for the high-involvement product. But when no character was present, participants exhibited greater purchase intention for the high-involvement product compared to the low-involvement product. This might be because the student sample may see other students as having higher credibility to rate a low-involvement product like backpack, which is an experience-oriented product. However, the student sample may think other students lack credible professional opinions about the laptop as a technical product.

Likewise, a significant three-way interaction between identified character, product involvement and valence suggest that while negative reviews may be seen as more trustworthy in general, their influence depends on other factors. Specifically, the combination of higher consistency on character background and product, such as in this case students with

a backpack, leads to higher trustworthiness and influence of negative reviews. When audiences perceive high consistency and probability that the source has relative expertise on the product, they are more likely to value their opinions, with negative opinions seen as more influential. However, if audiences perceive inconsistency between the source and the products, or are missing character cues for any evaluation, they might not trust any opinion seriously regardless of the valence. This preference might be more sensitive when reading positive reviews since audience need to be on guard for fake reviews that come from professional strategic tactics.

Taken together, the results enhance prior knowledge on eWOM and provide a new context for studies of narrative theories in a marketing context. This study confirms at the broad scale that message and source features of eWOM reviews play significant roles in their influence upon trustworthiness, brand attitude and purchase intentions for associated products and should not be overlooked when exploring the effects of eWOM at broader contexts. Specifically, all four of the factors tested showed significant effects in different contexts. However, the results, and specifically the interactions, also suggest caution in assuming that any message feature exhibits consistent main effects. Instead, future research should expand upon these findings and explore under what conditions do these, and other, message and source features interact to influence relevant factors for online marketing. The qualitative items in this study represented a secondary measure to provide some context to the empirical results, but future studies should expand upon qualitative methods to further explore the reasoning behind how these eWOM messages are evaluated. Furthermore, there are many other message and source factors within eWOM messaging, such as presence of evidence, argument quality, message discrepancy, reasoning or logic of reviews, balance of

opinion valence, language style, and culture differences and future research should explore how they also influence such evaluations.

Additionally, these findings suggest some practical suggestions for marketers. Testimony and online reviews with specific and similar identified characters could increase the trustworthiness of reviews, but only if their use aligns with the consumers' needs and perceived product attributes. Consumer perceptions about the expertise of characters specified in a review needs to match the specific type of expertise and similarity that the consumers are actively trying to seek in order for the increased trustworthiness to manifest. Therefore, eWOM marketing requires high consistency of source credibility with message quality to earn the trust of skeptical consumers who may have accumulated previous experiences with other online reviews. Higher involvement products need an even greater coupling of these factors for increased influence.

The findings also suggest that because negative reviews outweigh positive reviews in most cases, any negative reviews should receive a prompt response and remediation, especially in the case of crisis communication management. While this study did not test specific reputation repair strategies, negative reviews should be addressed to counter their strength in the eye of consumers. For regular marketing strategies, emotional messages might not be as ideal as expected compared to rational messages. It seems consumers have become more suspicious of emotional claims and show some resistance to such reviews and information. In the process of quick online decision-making, facts and functions seem to stand out and carry more weight in general, but especially for higher involvement products.



### **Limitations and Future Studies**

While this study found interesting results regarding message and source features in eWOM reviews, future studies should address limitations in this research.

This study used a mixed design to accommodate a smaller sample size. Although a fortunate small standard error helped to increase the power in this study, completely crossing all relevant factors would lead to increased power to unravel some of these complex relationships. Likewise, this study collected a small amount of qualitative data to provide context to some of the results, but future studies could benefit by collecting more qualitative data to enhance the interpretation of quantitative results and detect new possible factors and relationships to explore. The order of reviews was randomized in this study to avoid order effects, but it is possible that order effects may represent an important factor in online reviews where posts are displayed in a list format. Future studies should examine if the simple order of presentation moderates any of the relationships observed in this study.

This study also chose specific products to represent high- and low-involvement product types, but additional products with more representativeness should be explored. For instance, the product categories could expand into service versus physical or utilitarian versus hedonic in future studies.

Similarly, the valence factor was manipulated as purely positive and purely negative, with an equal number of each present for each product. In a natural setting, online reviews might consist of mixed opinions with two-sided information within a single post or an unequal amount of valenced posts within the aggregate pool of reviews. Future studies should extend the exploration of valence into these more complex, but externally valid, contexts. Likewise, this study operationalized character similarity as social identity, but

future studies could expand upon this to include other possible types of similarity with identified characters, such as sharing similar needs, similar experiences or sharing a similar focus on the most important aspects of a product.

Finally, resistance to persuasion was treated as a control variable in this study, but it is possible that exploring its influence as a moderator could again provide more nuance to these exploratory effects. More research is needed to understand how this resistance and other possible moderators, such as skillfulness of online shopping, attitude toward advertisements or the goals or motivations of shopping, influence the effects of eWOM reviews in the more complex context in which consumers actually engage with these reviews and make their purchasing decisions.

**Table 1. Reliability Tests**

Variables	Cronbach's Alpha	N of Items
Attitude_A	.992	5
Attitude_B	.990	5
Attitude_C	.989	5
Attitude_D	.992	5
Purchase Intention_A	.992	5
Purchase Intention_B	.994	5
Purchase Intention_C	.985	5
Purchase Intention_D	.990	5
Resistance	.744	16

**Table 2. One-way ANOVAs for Between Subject Contrasts****Univariate Tests**

Variables	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Trust_Backpack	13.14	1,50	13.14	4.04	.05*	.08
Att_Backpack	3.61	1,50	.62	5.83	.02*	.10
PI_Backpack	1.02	1,50	1.02	1.55	.22	.03
Trust_Laptop	.39	1,50	.39	.08	.78	.00
Att_Laptop	.36	1,50	.36	.50	.48	.01
PI_Laptop	1.18	1,50	1.18	1.39	.25	.03
Trust_Character	22.12	1,50	22.12	4.78	.03*	.09
Att_Character	.23	1,50	.23	.34	.56	.01
PI_Character	.42	1,50	.42	.44	.51	.01
Trust_Ncharacter	.21	1,50	.21	.06	.81	.00
Att_Ncharacter	.68	1,50	.68	1.10	.30	.02
PI_Ncharacter	7.54	1,50	.52	14.55	.00***	.23

Notes:  $p < .05^*$ ,  $p < .01^{**}$ ,  $p < .001^{***}$

**Table 3. Repeated ANOVAs of Within Subjects Contrasts & Interactions**

Measure: Trustworthiness

Source	r_vs_e	p_vs_n	s_vs_g	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
r_vs_e	Linear			11.529	1	11.529	8.779	.005	.140
r_vs_e * Treatment	Linear			2.065	1	2.065	1.572	.215	.028
Error(r_vs_e)	Linear			70.915	54	1.313			
p_vs_n		Linear		7.639	1	7.639	4.756	.034	.081
p_vs_n * Treatment		Linear		.372	1	.372	.231	.633	.004
Error(p_vs_n )		Linear		86.733	54	1.606			
s_vs_g			Linear	1.121	1	1.121	1.538	.220	.028
s_vs_g * Treatment			Linear	3.531	1	3.531	4.845	.032	.082
Error(s_vs_g )			Linear	39.359	54	.729			
r_vs_e * p_vs_n	Linear	Linear		2.113	1	2.113	2.473	.122	.044
r_vs_e * p_vs_n * Treatment	Linear	Linear		.078	1	.078	.091	.764	.002

Table 3 continued

Error(r_vs_e *p_vs_n)	Linear	Linear		46.152	54	.855			
r_vs_e *s_vs_g	Linear		Linear	1.997	1	1.997	2.065	.157	.037
r_vs_e *s_vs_g *Treatment	Linear		Linear	1.997	1	1.997	2.065	.157	.037
Error(r_vs_e *s_vs_g)	Linear		Linear	52.233	54	.967			
p_vs_n *s_vs_g		Linear	Linear	1.820	1	1.820	.709	.404	.013
p_vs_n *s_vs_g *Treatment		Linear	Linear	22.302	1	22.302	8.684	.005	.139
Error(p_vs_n *s_vs_g)		Linear	Linear	138.678	54	2.568			
r_vs_e *p_vs_n *s_vs_g	Linear	Linear	Linear	.622	1	.622	.657	.421	.012
r_vs_e *p_vs_n *s_vs_g *Treatment	Linear	Linear	Linear	.157	1	.157	.166	.685	.003
Error(r_vs_e *p_vs_n*s_vs_g)	Linear	Linear	Linear	51.072	54	.946			

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APPENDIX A  
STIMULI MATERIALS AND GROUPING

The grouping about the 16 combinations of independent variables are constructed as following:

**Group1:**

[A]:

Positive\* Rational\* General\* Laptop

I recommend this BW\_2015 laptop. Much better performance than expected even though only with an i5. Performance of the SSD is great when I'm working on large files that also have cache files (lightroom, photoshop). The newest HD display is a huge visual upgrade from this one than my old laptop without this display tech. It reduces glare while maintaining incredible color and quality. I also like its small size and weight for travel.

Positive\* Emotional\* General\* Backpack

I'm very satisfied with this BW\_2015 laptop. I bet you'll either be satisfied or pleasantly surprised by its amazing battery. I've yet to find a more powerful, thoughtfully designed, and lightweight computer that can handle my day cradle to grave! I felt nothing on me when I carry it with me for a whole day. The screen is beautiful, design looks cool, and works like a dream! The pixel density is so high that my eyes can hardly discern individual pixels.

Negative\* Rational\* General\* Laptop

This BW\_2015 laptop is good but not worthy. There are so many other choices better than this one with cheaper price. In this day and age of computing on a 13 inch device, here's what

most users should get in modern spec -- A Full HD screen (1080p), 8 Gigs of RAM, 256 SSD onboard, A processor which can handle your needs. But Not in such high price.

Negative\* Emotional\* General\* Laptop

I'm upset with this BW\_2015 laptop. When I lying on the sofa with the laptop on my stomach, this thing is a brick! What's worse, the sound from the speakers is atrocious! The maximum volume is low and requires strain to hear. This is compounded by the issue that it appears the sound is coming out from the bottom of the machine. This thing is quite annoying...

[D]:

Positive\* Rational\* Student\* Backpack

My hunt was on for something sporty and cool. I am very pleased with this MaxTrav backpack especially as a college student carrying around a laptop and many textbooks. It is made of waterproof material. There's a soft lined laptop sleeve which can hold a tablet or laptop up to 15". There are two large zippered compartments and two smaller zippered compartments in the front to hold keys, cell phones, etc. two side pockets to hold water bottles. The thick padding on the straps are comfortable and distribute the weight evenly across my shoulders during long walks to class.

Positive\* Emotional\* Student\* Backpack

Awesome backpack! Light, great quality, stylish, waterproof and has two cool bottle pockets on the side. I bought this MaxTrav Backpack two years ago at the beginning of my freshman year of college, and I now buy this again for my best friend. As a busy college student, I use this bag heavily through practically every weather condition, this backpack does not show

any signs of wear or tear! My stuff is more easily organized and easy to find with many pockets in it. I use this everytime I leave the house to go to class or the gym, lot of my friends said they love it!

Negative\* Rational\* Student\* Backpack

This MaxTrav backpack looks nice, but it is much smaller and worse than expected I had to send it back. This is more along the size of a day pack but probably not the best choice as a school backpack, especially if you are carrying books, notebooks, and a laptop of some kind. The quality of this MaxTrav bag I would say it was average, or worse. After using it for regular sized textbooks in school and some hiking trips, perhaps 5-10 separate uses none of them rugged, the stitching in the right hand bottom corner of the bag began coming undone.

Negative\* Emotional\* Student\* Backpack

DO NOT BUY! It is way too small and flimsy for the price! The overall construction and design is terrible beyond that however. The first sign was as I put it on the shoulder strap fell off. All through the day on campus, I found that straps just falling off as well... I can't see this thing holding much more than a small laptop or tablet and a couple of books for any college student as me. It is terrible I hate it!

## **Group2:**

[B]:

Positive\* Rational\* Student\* Laptop

I like the outstanding screen, fast reaction, and up to 9-hour-battery of the BW\_2015 laptop. I do photo and film editing with it for my editing course, and it works smooth when I'm using

apps with large files (photoshop, indesign, etc.) with clear display and fast producing speed. It saves my time on homework.

Positive\* Emotional\* Student\* Laptop

BW\_2015 is a perfect laptop while I am out for school. Because 1. it has such a long battery life which could totally meet my need for daily classes! 2. Its cute looking with sharp display always makes me relax and comfortable. 3. It is quite lighter than my old laptop, so that I don't felt tired any more to carry it while walking across the campus on weekdays!

Negative\* Rational\* Student\* Laptop

I'm unsatisfied with this BW\_2015 laptop, it is not good as expected. The battery life can hardly meet my need as a college student. I can get about 6 hours of battery life with the brightness at about 75% and doing web searches, Excel/Word work, Powerpoint work, streaming music on and off, and watching a couple videos on news sites during school. And the laptop gets really hot when using resource intensive applications.

Negative\* Emotional\* Student\* Laptop

Highly disappointed with the product quality and speed! Besides the terrible sound speakers, this thing is slow!!! I can't open the laptop and put better ssd or more gb! It is definitely not enough for my study and entertainment need as a normal college student. I don't know who is this laptop designed for. I Won't buy this expensive thing again! Really disappointed I hope I will somehow change my mind!

[C]:

Positive\* Rational\* General\* Backpack

This model of MaxTrav Backpack is very nice. It has plenty of room including several compartments for anything, allowing it to expand further and carry a light or heavy load. Each of the two side pockets has an elastic band and see-through mesh netting. The zippers work well so far. And very important, the straps are comfortable, not too thick or rough that it hurts to wear on bare skin (for example with tank tops on).

#### Positive\* Emotional\* General\* Backpack

This MaxTrav bag has held up extremely well for heavy users. I LOVE IT! My last one of this brand lasted over 2 years, no other bag comes close--saves money in the long run!! Photo doesn't reflect the rich bright green, perfect! It has more storage than I imagined, I packed a week's worth of clothes in this backpack for a seven-day road trip. It worked perfectly!!! The backpack also holds up well in rain; amazingly well!

#### Negative\* Rational\* General\* Backpack

This MaxTrav backpack was poorly stitched, the straps were of different lengths, one of the zippers was off track upon arrival, the straps would not stay secured, and the shoulder straps were too small for an adult. I couldn't get it on and off comfortably because of the straps. I used it for one day and had to constantly readjust the straps because they continuously slid through the fasteners. The stitching was very uneven, causing the straps to pull at odd angles and the bag to look misshapen. All in all, do not buy this with the expectation of it being dependable.

#### Negative\* Emotional\* General\* Backpack

This MaxTrav backpack was totally not what I expected. Product wasn't represented well by the picture! Build quality was stringy at worst and lackluster at best. Although it looks cool



from a distance and in pictures, I won't be surprised if one of the seams comes apart in the first 6 months. Sent it back and opted for a more expensive, but better quality backpack and did not regret my decision!

APPENDIX B  
QUESTIONNAIRE

**Attitude towards Product** (Spears, N., & Singh, S. N. (2004). Using 5-point Madden, Allen, and Twible's (1988) scale. )

Please describe your overall feelings about the products described in the reviews you just read using 1-5.

How would you describe your overall attitude about the BW\_2015 Laptop in the reviews you just read?

1. Unappealing/appealing
2. Bad/good
3. Unpleasant/pleasant
4. Unfavorable/favorable
5. Unlikable/likable

**Purchase Intentions Questions** (Spears, N., & Singh, S. N. (2004). Using 5-point Madden, Allen, and Twible's (1988) scale. )

Please describe your overall feelings about the product described in the reviews you just read using 1-5.

How would you describe your overall purchase intention about the BW\_2015 laptop in the reviews you just read?

1. Never/definitely

2. Definitely do not intend to buy /definitely intend
3. Very low/high purchase interest
4. Definitely not buy it/definitely buy it
5. Probably not/probably buy it

### **Rating of Trustworthy and Influential in Reviews**

Here are those four reviews again. Think back as to which reviews had the most influence on the decision you just made. Please give each a rating from “No influence on my decision” to “A great amount of influence on my decision.”

### **The Reasons for the Most and Least Influential Ratings**

1. Look at the review you rated with the most influence. Why was that review the most influential for you?
2. Look at the review you rated with the least influence. Why was that review the least influential for you?

### **Resistance Scale**

Resistance to Persuasion Scale (Brin~ol, Rucker, Tormala, & Petty, 2004)

(5-point scale: *extremely uncharacteristic of you to extremely characteristic of you*)

1. I am strongly committed to my own beliefs.
2. My own beliefs are very clear.
3. It is hard for me to change my ideas.
4. I usually do not change what I think after a discussion.
5. I find my opinions to be changeable.

6. After participating in an informal debate, I always have the feeling that I was right.
7. It could be said that I am likely to shift my attitudes.
8. I often vary or alter my views when I discover new information.
9. After forming an impression of something, it's often hard for me to modify that impression.
10. My ideas are very stable and remain the same over time.
11. I have never changed the way I see most things.
12. What I think is usually right
13. My opinions fluctuate a lot.
14. I often have doubts about the validity of my attitudes.
15. If it is necessary I can easily alter my beliefs.
16. I have often changed my opinions.

### **Demographics**

1. What is your age?
2. What is your gender?

APPENDIX C

IRB APPROVAL

IRB ID: 15-272

INSTITUTIONAL REVIEW BOARD (IRB)  
Exempt Study Review Form

Title of Project: Testing the influence of narrative characteristics of Word-of-Mouth message on narrative transportation		
Principal Investigator (PI): Xiaowen Zhu		Degrees: Master of Science
University ID: [REDACTED]	Phone: [REDACTED]	Email Address: xiaowenz@iastate.edu
Correspondence Address: 905 Pinon Drive, Unit 3, Ames, IA, 50014		
Department: Journalism and Mass Communication		College/Center/Institute: Liberal Arts and Sciences
PI Level: <input type="checkbox"/> Tenured, Tenure-Eligible, & NTER Faculty <input type="checkbox"/> Adjunct/Affiliate Faculty <input type="checkbox"/> Collaborator Faculty <input type="checkbox"/> Emeritus Faculty <input type="checkbox"/> Visiting Faculty/Scientist <input type="checkbox"/> Senior Lecturer/Clinician <input type="checkbox"/> Lecturer/Clinician, w/Ph.D. or DVM <input type="checkbox"/> P&S Employee, P37 & above <input type="checkbox"/> Extension to Families/Youth Specialist <input type="checkbox"/> Field Specialist III <input type="checkbox"/> Postdoctoral Associate <input checked="" type="checkbox"/> Graduate/Undergrad Student <input type="checkbox"/> Other (specify: )		
FOR STUDENT PROJECTS (Required when the principal investigator is a student)		APR 20 2015
Name of Major Professor/Supervising Faculty: Michael Dahlstrom		By IRB
University ID: [REDACTED]	Phone: [REDACTED]	Email Address: [REDACTED]
Campus Address: [REDACTED]		Department: Greenlee School
Type of Project: (check all that apply) <input checked="" type="checkbox"/> Thesis/Dissertation <input type="checkbox"/> Class Project <input type="checkbox"/> Other (specify: )		
Alternate Contact Person:		Email Address:
Correspondence Address:		Phone:

ASSURANCE

- I certify that the information provided in this application is complete and accurate and consistent with any proposal(s) submitted to external funding agencies. Misrepresentation of the research described in this or any other IRB application may constitute non-compliance with federal regulations and/or academic misconduct.
- I agree to provide proper surveillance of this project to ensure that the rights and welfare of the human subjects are protected. I will report any problems to the IRB. See Reporting Adverse Events and Unanticipated Problems for details.
- I agree that modifications to the approved project will not take place without prior review and approval by the IRB.
- I agree that the research will not take place without the receipt of permission from any cooperating institutions, when applicable.
- I agree to obtain approval from other appropriate committees as needed for this project, such as the IACUC (if the research includes animals), the IBC (if the research involves biohazards), the Radiation Safety Committee (if the research involves x-rays or other radiation producing devices or procedures), etc.; and to obtain background checks for staff when necessary.
- I understand that IRB approval of this project does not grant access to any facilities, materials, or data on which this research may depend. Such access must be granted by the unit with the relevant custodial authority.
- I agree that all activities will be performed in accordance with all applicable federal, state, local, and Iowa State University policies.

Signature of Principal Investigator \_\_\_\_\_ Date \_\_\_\_\_  
 Signature of Major Professor/Supervising Faculty \_\_\_\_\_ Date \_\_\_\_\_  
 (Required when the principal investigator is a student)

I have reviewed this application and determined that departmental requirements are met, the investigator(s) has/have adequate resources to conduct the research, and the research design is scientifically sound and has scientific merit.  
 Printed Name of Department Chair/Head/Director \_\_\_\_\_ Signature of Department Chair/Head/Director \_\_\_\_\_ Date \_\_\_\_\_

For IRB Use Only	<input type="checkbox"/> Not Research Per Federal Regulations	<input type="checkbox"/> No Human Participants	Review Date: 7/8/15
	<input checked="" type="checkbox"/> Minimal Risk	EXEMPT Per 45 CFR 46.101(b): 2	
IRB Reviewer's Signature _____			

