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Information distortion in word-of-mouth retransmission: the effects of retransmitter intention and source expertise

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Abstract

Recently, word of mouth (WOM) has gained increasing strategic importance. The rising prevalence of communication via social media has made information retransmission through WOM a new norm. However,although several WOM studies have revealed that information becomes distorted as it is disseminated and that WOM retransmission tends to distort information, the phenomenon of information distortion in the WOM retransmission context remains relatively underexplored. This study examined the role of two key factors (retransmitter intention and source expertise) in WOM retransmission and how they influence the distortion of WOM information in terms of information sources and content. Two carefully designed experiments revealed that a retransmitter's persuasive (vs. informative) intention increases (1) information distortion, including exaggeration of its content, and (2) information source distortion when the source has relatively less expertise. These findings expand the scholarly understanding of WOM communication and offer managerial insights into viral marketing strategies.

Keywords Information distortion · Word of mouth · Retransmission · Source distortion · Content distortion

Introduction

In February 2021, Tesla CEO Elon Musk and Robinhood founder Vladimir Tenev discussed the short selling of GameStop stock on Clubhouse (an app known as the "audio version of Twitter") (Criddle, 2021). This discussion went viral across global and social media platforms, fueling a steep rise in GameStop stock prices. A close examination of social media channels other than Clubhouse (e.g., YouTube, Twitter,

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Facebook, and Instagram) revealed that, although some users still post original content, most repost the content of eminent figures (such as Elon Musk) or modify and edit original content to suit their purposes and preferences (Arora, 2022; Meel & Vishwakarma, 2020; Moore & McFerran, 2017; Vosoughi et al., 2018).

Word of mouth (WOM) refers to the verbal communication between consumers regarding products and services (Arndt, 1967; Liu, 2006). Bristor (1990) identified two types of WOM transmission: (1) the dyadic interaction between a sender and a receiver, or (2) transmission via multiple dyads, i.e., one sender conveying WOM information to several receivers or several senders conveying information to one receiver. Previous studies have mainly examined the dyadic interaction between a sender and a receiver (Allsop et al., 2007; Arndt, 1967; Buttle, 1998; Liu, 2006; Sernovitz et al., 2006). In dyadic interactions, information distortion occurs during the process of constructing a positive self-image (Sengupta et al., 2002) or averting self-threats via social comparison (Argo et al., 2006). However, most previous studies have only considered information distortion in the initial WOM transmission, i.e., the dyadic interaction between the original sender and the first receiver. The widespread use of social network services and other online media channels has dramatically increased the strategic importance of WOM (Kim et al., 2021). Moreover, multiple-dyad WOM, where countless senders and receivers have interactions, has become more common in new media channels (Chen & Yuan, 2020; Mendoza et al., 2010; Stoica, 2020; Wang et al., 2018). The most important characteristic of multi-dyad WOM is that the initial senders' messages become increasingly distorted as they are transmitted to the second, third, and subsequent receivers (Barrett & Nyhof, 2001; Chen et al., 2020; Melumad et al., 2021; Tan et al., 2016). Given the current status of new media, it is necessary to understand the various phases of information transmission, including WOM retransmission, to better understand the entire process of information diffusion via WOM. Therefore, this study investigates information distortion in the context of WOM retransmission. Specifically, we explore how retransmitters distort the information received from original senders when transmitting it to subsequent receivers.

This study expands information diffusion research by identifying the factors that lead to information distortion in the WOM transmission process. In addition, this study investigates how WOM works in the context of traditional offline media (Study 1) and new online media (Study 2), thus, providing insights into the development of WOM strategies for companies that use both traditional and online media as marketing tools.

WOM retransmission and its distortion

Information distortion

Most social psychology and communication studies regarding information manipulation have focused on the act of "lying" or "deception" (Buller et al., 1994; DePaulo et al., 2003; Kashy & DePaulo, 1996; McCornack, 1988; Metts & Chronis, 1986; Miller & Stiff, 1993). Should the definition of a lie be "false testimony with intent"

(Azizli et al., 2016; DePaulo et al., 1996), then the information manipulation that occurs during communication results from the specific manipulative intent of the sender. However, individuals may also edit or alter parts of messages to convey them more effectively and efficiently (Bowers et al., 1977; Metts & Chronis, 1986; Turner et al., 1975). Accordingly, McCornack (1988, 1992) highlighted the need to expand the field of information manipulation by including the act of selecting or changing information to streamline communication (rather than intentionally deceive someone) as a form of information manipulation.

Research regarding information manipulation has defined the various forms of information manipulation, such as concealment, falsification, and distortion (Ekman, 1985; McCornack, 1992; Metts, 1989; Turner et al., 1975). Concealment refers to omitting specific information. On the other hand, falsification refers to delivering the wrong information, and distortion is altering information via exaggeration, minimization, or vagueness to limit the message recipient's understanding of the information or leave room for misinterpretation. Therefore, the alteration of information to increase the effectiveness of communication can be interpreted as a form of information distortion (McCornack, 1992; Pace & Boren, 1973; Turner et al., 1975).

Researchers have studied information distortion in organizations and marketing contexts. These studies have shown that individuals either conceal or selectively choose information to improve organizational communication (O'Reilly, 1978). Such information distortion may differ depending on the hierarchy of communication (Gaines, 1980) and the amount of information available (Huber, 1982). Other studies have found that when asymmetries exist in the available information, marketing managers tend to modify or revise the information they provide to consumers (and vice versa) to further their interests (e.g., distorting product information or service experience) (Andrade & Ho, 2009; Anthony & Cowley, 2012; Bickart et al., 2015; Mavlanova et al., 2008). Furthermore, some researchers have observed that consumers deliver distorted information to other consumers to promote their market status (e.g., market mavens), serve their personalities (e.g., narcissism, psychopathy) (Harris et al., 2016; Kapoor et al., 2021), or form positive images to further their interests (Argo et al., 2006, 2011; Sengupta et al., 2002).

In summary, organizational behavior and marketing studies have documented frequent information distortion in situations where senders seek to convey information more efficiently to promote their interests. Thus, information distortion can be considered a useful strategy for delivering messages. In this study, we specifically examine information distortion in the consumers' WOM retransmission context.

Information distortion during WOM retransmission

The notion that WOM plays a critical role in shaping consumers' attitudes and actions has been widely accepted in consumer behavior research (Katz & Lazarsfeld, 1955; Whyte, 1954). While early studies focused on the effects of WOM on consumers' attitudes and actions, this line of research has gradually expanded to include the mechanisms behind WOM information flows (Brown & Reingen, 1987; Frenzen & Nakamoto, 1993; Reingen & Kernan, 1986).

WOM transmission studies have found that WOM transmission does not stop at the transmission from one sender to one receiver; rather, the receiver transforms into another sender who retransmits the information (Brown & Reingen, 1987), thus, disseminating WOM information (Bristor, 1990; Chen et al., 2020; Stephen & Lehmann, 2009; Tan et al., 2016). Furthermore, previous studies have indicated that the relationships within and structures of transmission networks influence the dissemination of WOM information (Brown & Reingen, 1987; Frenzen & Nakamoto, 1993; Reingen & Kernan, 1986). For example, the degree of information spread in a social network depends on the personal relationships within the network or the strength of ties (such as cliques) among members (Granovetter, 1973; Hage & Harary, 1983; Lin et al., 2021; Mendoza et al., 2010). Another study examining the structure of WOM spread found that information trickles down from top to bottom, and the bottom group tends to have an identical replaceable structure that allows for the dissemination of information without any direct connections (Breiger et al., 1975; Knoke & Kulinski, 1982; White et al., 1976). These findings suggest that WOM accelerates when social solidarity is stronger, and retransmission occurs more easily when network structures are perfect (Brown & Reingen, 1987; Frenzen & Nakamoto, 1993; Reingen & Kernan, 1986). Thus, studies regarding information retransmission in marketing have usually focused on the spread of WOM and the factors that influence it (Allsop et al., 2007; Brown & Reingen, 1987).

In the retransmission context, unlike the typical WOM context, the receiver of information is converted into a sender, i.e., the retransmitter (Inman et al., 2004; Richins, 1984). As such, the retransmitter is less likely to fully understand the contents to be transmitted and is more likely to have only a partial understanding of the message contents. Melumad and his colleagues also revealed that content details and complexity diminish as the information is retransmitted repeatedly while opinion and subjectivity increase (Melumad et al., 2021). In other words, the problem with retransmission is that, during the retransmission process, the cognitive reorganization of information is likely to occur, which refers to retransmitters selectively and arbitrarily remembering certain information that is familiar or interesting to them and excluding much of the details in the information (Allport & Postman, 1947; Marsh & Tversky, 2004; Melumad et al., 2021; Rosnow, 1980; Tan et al., 2016). According to previous research on confirmation bias, humans have a bias that selectively emphasizes information consistent with their beliefs or attitudes (Hoch & Ha, 1986). Thus, a retransmitter's confirmation bias could become more pronounced depending on the extent to which the received information conforms to their own beliefs and attitudes. Consequently, information distortion may become severe in some cases (Dubois et al., 2011; Melumad et al., 2021; Villarroel et al., 2016).

Additionally, since retransmitters are not the original sources of information, they may have varying degrees of belief in the accuracy of the original information (Dubois et al., 2011). To a retransmitter, it is the information itself, not the perceived accuracy of the original information, which is important in the retransmission process (Dubois et al., 2011). This lack of certainty about the original information may accelerate information distortion as retransmission continues from one retransmitter to another.

Recent WOM studies have highlighted the same problem. Thus, consumers are not as fair as expected, which means WOM may involve significant information distortion (Chung & Darke, 2006; Cowley, 2014; Duan et al., 2008; Wojnicki & Godes, 2007). For example, previous studies found that, when transmitting acquired information to others, individuals tend to exaggerate valence (Harris et al., 2016; Kapoor et al., 2021), distort the certainty of information (Dubois et al., 2011), or selectively choose WOM information depending on the characteristics of receivers (Dubois et al., 2016; Melumad et al., 2021; Tan et al., 2016).

Although several studies on consumer behavior and communication have focused on WOM information distortion, no study has specifically focused on the information distortion that occurs during WOM retransmission or the factors that influence retransmission bias. Today, the e-commerce market is rapidly growing, and COVID-19 has accelerated the development of online communities. Subsequently, the rate at which information is disseminated via online media is increasing rapidly, with individuals reposting what they hear or editing existing information to suit their purposes, thus, increasing the likelihood of information distortion (Arora, 2022; Meel & Vishwkarma, 2020; Stoica, 2020; Vosoughi et al., 2018; Wang et al., 2018). For example, when someone reposts information that has already been uploaded to a friend's account or retweets an influencer's tweet, they often either edit or alter the original message (Chen et al., 2020; Moore & McFerran, 2017).

By narrowly defining retransmission as the act of receivers becoming senders to disseminate information, this study examines the information distortion that occurs during WOM retransmission. We considered senders' intentions (informative vs. persuasive) and source expertise (relative expertise of the sender and retransmitter) as the two main factors influencing information distortion. Thus, this study focuses on how these two factors influence information distortion, including source and content distortion.

The effect of WOM retransmitters' intentions on information distortion

Communication requires cognitive effort from both the senders and the receivers (Zajonc, 1960). Such effort includes special goals (McCann & Higgins, 1988), motives (Hennig-Thurau et al., 2004; Rubin et al., 1988; Sundaram et al., 1998), and, most relevant to this research, intentions (Sperber & Wilson, 1995). Intentions refer to the mental goals that precede actions (Gibbs et al., 2014). Before any communication occurs, senders may have different intentions, which can be classified as either informative or persuasive intentions (Sperber & Wilson, 1995).

Informative intention, also known as expressive intention (Gibbs et al., 2014), refers to the sender's intention to manifest their assumptions in the receiver's mind (Sperber & Wilson, 1995). Senders with informative intentions seek to convey their thoughts to receivers derived from what they see, hear, and feel (Gibbs et al., 2014; Sperber & Wilson, 1995; Taillard, 2000).

Persuasive intention refers to the sender's intention to influence another individual. Taillard (2004) used the terms "persuasive intention" and "communicative intention" interchangeably. Senders with persuasion intentions often have

communicative intentions—seeking to share their thoughts and information with receivers so that this information can mutually manifest in the receivers' minds (Sperber & Wilson, 1995). Senders with persuasive intentions who intend to communicate seek to make the receivers believe and adopt their opinions (Sperber & Wilson, 1995; Taillard, 2000, 2004).

In summary, informative intentions involve delivering thoughts and information as is, while persuasive intentions involve senders and receivers interacting by sharing their thoughts and opinions so that receivers can accept the information conveyed by senders (Sperber & Wilson, 1995). Thus, transmitters with persuasive intentions seek to communicate reciprocally (i.e., senders want receivers to adopt and believe the conveyed information), while those with informative intentions engage in one-way communication (Sperber & Wilson, 1995).

The senders' intentions (informative vs. persuasive) may influence information distortion in communication. As previously mentioned, senders with informative intentions seek to accurately retransmit information to the receivers (Gibbs et al., 2014; Sperber & Wilson, 1995; Taillard, 2000). In terms of retransmission, WOM retransmitters with informative intentions are not motivated to distort information since their paramount goal is to deliver information as precisely as possible. Therefore, we hypothesized that WOM retransmitters with informative intentions would not distort information.

In contrast, previous studies have shown that communicators with persuasive intentions seek to change the beliefs of receivers such that they adopt the communicators' opinions (Sperber & Wilson, 1995; Taillard, 2000, 2004). Thus, WOM retransmitters with persuasive intentions tend to modify their arguments or offer additional reasons to increase the receivers' acceptance of the transmitted information (Melumad et al., 2021; Taillard, 2004). Furthermore, individuals that seek to influence and persuade others often deliberately distort information to achieve their goals (Douglas & Sutton, 2003; Kashy & DePaulo, 1996; Miller & Stiff, 1993Park, 2013). Additionally, the retransmission process may be at risk of being affected by confirmation bias. In other words, the retransmitter may inadvertently (or even intentionally) distort information in a direction consistent with the beliefs that the retransmitter already held prior to receiving the information to be retransmitted. Thus, the retransmission process can cause distortion, especially when the retransmitter has a persuasive motive (Villarroel et al., 2016). Therefore, we proposed that retransmitters with persuasive intentions are more likely to distort information than retransmitters with informative intentions. Accordingly, we developed the following hypothesis:

Hypothesis 1 In WOM retransmission, retransmitters with persuasive intentions are more likely to distort WOM information than those with informative intentions.

The effects of source expertise on information distortion

As a form of communication, advertising aims to encourage consumers to favor advertised brands and purchase them. To this end, Petty et al. (1983) argued that the

most important factors in advertising are the message effect and the source effect. They stated that the message effect occurs when marketers seek to persuade consumers by providing compelling information about advertised brands. On the other hand, the source effect occurs when viewers are persuaded by the attractiveness and credibility of the endorsers in advertisements.

This study assumes that advertisements that persuade audiences by leveraging the message and source effects resemble WOM communication, where the senders seek to persuade the receivers. Accordingly, we applied persuasion theory to WOM. Specifically, we viewed the persuasiveness of WOM information as arising from the message effect of the information content and the source effect of the information source. Thus, WOM information distortion can comprise both source distortion, wherein retransmitters distort the WOM information source by concealing the original sender's details or recounting the WOM information as something they experienced directly, and content distortion, wherein retransmitters distort the content of the WOM information transmitted by the original senders.

We predicted that the retransmitters' intentions would interact with the differences in expertise levels between the original senders and the retransmitters, resulting in the distortion of WOM information sources. Previous communication studies have argued that source credibility increases the likelihood of persuasion (Chen et al., 2021; Horai et al., 1974; Hovland & Weiss, 1951; Johnson & Izzett, 1969; Powell, 1965; Warren, 1969) and is derived from the source's expertise or trustworthiness (Hovland et al., 1953). In particular, researchers have examined source expertise as a key factor that increases source credibility, thereby positively affecting the attitudes of other individuals in communication contexts (Gilly et al., 1998; Hass, 1981; Lin et al., 2021; Lu et al., 2022; Nataraajan & Chawla, 1997; Pornpitakpan, 2004; Sternthal et al., 1978). Source expertise refers to a receiver's perception of whether a sender is sufficiently knowledgeable to make accurate judgments and recommendations regarding a certain issue (Birnbaum & Stegner, 1979; Hovland et al., 1953). Therefore, since source expertise is considered a subjective receiver-perceived attribute rather than an intrinsic sender attribute, any individual (e.g., a friend) deemed to have more experience and familiarity with a given subject can qualify as a sender with the required expertise (Assael, 1995).

According to Sperber and Wilson (1995), in communication contexts, senders with persuasive intentions tend to take advantage of their authority and credibility to enhance the receivers' acceptance of their transmitted information. In the WOM retransmission context, retransmitters can avail of two dimensions of source expertise—the original senders' expertise and their expertise. Therefore, retransmitters with persuasive intentions seek to persuade receivers more effectively and, thus, compare their expertise with that of the original senders, highlighting the more effective option as the information source. For example, "opinion leaders" who hold superior knowledge in a given domain summarize and selectively choose the key factors of the target information to efficiently convey their opinions and interpretations (Melumad et al., 2021). Similarly, retransmitters may choose to conceal the original source of information. If it is not suitable for providing their interpretations and opinions, they would decide which source, the original senders or themselves, are the more credible experts.

Specifically, retransmitters who believe they have less expertise than the original sender will not distort the WOM information source since establishing the original senders as the information sources would increase the persuasiveness of the information. However, retransmitters who view their expertise as greater than the original sender will either conceal the information source or present themselves as the information source, with the expectation that their expertise would be more effective than that of the original sender in persuading receivers to accept the transmitted information.

Thus, in WOM retransmission, retransmitters with persuasive intentions are more likely to distort the information sources when they consider their expertise greater than that of the original senders. In contrast, retransmitters with informative intentions tend to focus on accurately delivering the WOM information to the receivers (Berger & Milkman, 2012; Sperber & Wilson, 1995; Taillard, 2000, 2004).

Thus, they would have little motivation to distort the WOM information sources even if they assume their expertise to be greater than the expertise of the original senders. Therefore, we proposed the following hypotheses:

Hypothesis 2-1 The perceived difference in expertise between a WOM retransmitter and the original sender does not affect the retransmitter's likelihood of source distortion when the retransmitter has an informative intention.

Hypothesis 2-2 The perceived difference in expertise between a WOM retransmitter and the original sender affects the retransmitter's likelihood of source distortion when the retransmitter has a persuasive intention. Specifically, the retransmitter is more likely to distort the information source when the expertise of the original sender is relatively low compared to the retransmitter.

Retransmitter's intention and exaggeration of information content

While source distortion is understood as a type of distortion that is based on whether the retransmitter chooses to reveal their information source to enhance the credibility of the information (Horai et al., 1974; Hovland & Weiss, 1951, 1953; Johnson & Izzett, 1969; Powell, 1965; Warren, 1969), the retransmitter can also distort the content of the message so that it is delivered appropriately for the specific purpose they have in mind. Thus, this study examines content distortion and its various forms and further explores how it differs depending on the intention of information distortion (i.e., persuasive vs. informative).

There are four types of content distortion that can occur in communication (Marsh & Tversky, 2004): exaggeration, minimization, selectivity, and adding information. Exaggeration is defined as stretching or embellishing the truth. Expressions such as "that line must be at least a mile long" are examples of this type of distortion. Minimization is defined as a reduction of the truth, e.g., drunken drivers minimizing their drunkenness. Selectivity is defined as eliminating important event details, e.g., omitting the presence of alcohol. Finally, adding information is defined as including details or events that are not entirely related to the message being communicated.

However, previous studies have suggested that exaggeration and minimization are the two most researched types of information content distortion (Anolli et al., 2002). This study integrates these four distortion types, which were proposed by Marsh and Tversky (2004), into two main types: exaggeration and minimization. In this classification, we categorized "adding information" as a form of exaggeration that occurs when the sender seeks to further emphasize the content of a message. Moreover, although minimization is typically defined as a reduction in the information content, we considered selectivity, which involves completely omitting some information, as an extreme form of minimization. Based on these two types of distortion (exaggeration and minimization), this study investigated the content distortion that can occur in the retransmission process.

Allport and Postman (1947), in their study regarding the spread of rumors, revealed that minimization is a universal phenomenon that includes both the exclusion of certain details from information during the sequential transmission of the message and the selective remembrance of information that is only familiar or interesting to the transmitter. Moreover, Marsh and Tversky (2004) stated that the minimization of information content occurs universally and intensely in the transmission process. Based on these studies, we anticipated that the minimization of information by a retransmitter occurs regardless of intention.

In contrast, exaggeration appears to be selectively performed depending on the personal purposes of the retransmitter rather than occurring universally in the retransmission context. For example, information transmitters exaggerate information to secure a positive perception of themselves (Sengupta et al., 2002; Wojnicki & Godes, 2007), to raise interest in the information they transmit (Cowley, 2014), or to attract more attention to their message (Maurer & Schaich, 2011; Yoo & Gretzel, 2009). Specifically, people utilize emotional (Maurer & Schaich, 2011; Rocklage et al., 2018) and hyperbolic expressions (Yoo & Gretzel, 2009) to enhance the impact of the message they are delivering and prominently utilize punctuation and function words (Afroz et al., 2012; Shojaee et al., 2013). Therefore, people who convey exaggerated information tend to use words with a stronger tone or more modifiers than present in the actual information (Banerjee, 2022; Banerjee & Chua, 2017; Banerjee et al., 2017; Burgoon et al., 2016; Maurer & Schaich, 2011; Missen & Boughanem, 2009; Sengupta et al., 2002; Wojnicki & Godes, 2007).

Thus, retransmitters who deliver information with a persuasive intention are more likely to exaggerate information to attract more attention and interest in the information being delivered. In contrast, people with an informative intention tend to deliver information as is rather than exaggerating and distorting the content since their main purpose is to accurately convey the information. Therefore, we developed the following hypothesis:

Hypothesis 3 In WOM retransmission, retransmitters are more likely to exaggerate WOM information when they have persuasive rather than informative intentions.

Study 1

Purpose

This study aimed to identify the factors that influence the likelihood of information distortion during WOM retransmission and, thus, expand WOM retransmission and information diffusion research. We verified the results by conducting experiments to investigate the distortion that occurs during offline WOM retransmission via traditional media. More specifically, by manipulating the situations in which individuals receive and retransmit WOM information, we sought to determine whether two factors—the retransmitter's intention and the source's expertise—trigger the distortion of the retransmitted information (H1) or the information sources (H2).

Pretests

We conducted a series of pretests to develop WOM information for use in our WOM retransmission scenario. Additionally, we manipulated the expertise of the retransmitters relative to that of the original senders as well as the retransmitters' intentions. Subsequently, we developed a hypothetical scenario utilizing exaggerated and minimized WOM information as another measure of WOM information content distortion.

We designed the first pretest to develop WOM information for the experiment. The primary goal of this pretest was to avoid the potential confounding effects caused by participants with prior knowledge of the given WOM information. In other words, participants' familiarity with the WOM information could affect their retransmission behavior, resulting in arbitrary information distortion. Thus, to reduce the likelihood of these confounding effects, we sought to develop WOM information that was unfamiliar to all the participants. Based on this criterion, we conducted a focus group interview with four university students and chose information regarding the Formula 1 (F1) Grand Prix, the most famous car race in the world, as our experimental stimulus. Next, we asked a small group of students ($N=20$) to rate their perceived familiarity with and the relevance of the F1 Grand Prix. The results were consistent with our expectations, i.e., importance ($M=1.85$), familiarity ($M=1.90$), involvement ($M=1.70$), and interest ($M=2.40$) all had below-average values. Subsequently, we developed a WOM message using detailed information regarding the F1 Grand Prix (including the 2013 F1 Grand Prix held in Jeonnam Province, Korea), such as the implications, car prices, and economic and social effects of this world-renowned race. Next, we asked another small group of students ($N=20$) the same questions about our WOM message, and the results were as expected, i.e., importance ($M=1.85$), familiarity ($M=1.75$), involvement ($M=1.70$), and interest ($M=2.00$), indicating that this message was suitable for use as WOM information in our study.

Next, to manipulate the relative expertise of the original WOM information senders, we developed two scenarios. In the first scenario, participants' mothers

delivered the WOM information regarding the F1 Grand Prix (low expertise condition) to the participants, and in the second scenario, a professional car magazine reporter conveyed the WOM information (high expertise condition) to the participants. Subsequently, we asked 25 university students to rate their respective perceptions of the relative expertise of each sender using the following three seven-point scale measures (Homer & Kahle, 1990; Netemeyer & Bearden, 1992): "The sender has more knowledge of the issue than I," "The sender has more expertise on the issue than I," and "The sender has more experience of the issue than I' (1 = not likely at all, 7 = very likely). To check our manipulation, we utilized the mean values of these three measures (Cronbach's alpha, $\alpha = 0.85$). The results showed that the participants perceived the car magazine reporter as having a higher level of expertise ($M = 5.84$) than their respective mothers ($M = 3.67$, $t(24) = 6.30$, $p < 0.01$).

Next, we developed two conversational contexts to manipulate the retransmitters' WOM intentions (informative vs. persuasive intention). The first situation was a casual conversation where the participants were asked to casually exchange the WOM information with the receivers without any intention of influencing them (informative intention condition). The second situation was a heated discussion where the participants were asked to persuade the receivers to adopt the WOM information they conveyed (persuasive intention condition). Next, we asked 24 university students about their communication intentions using the following two seven-point scale measures: "trying to persuade the receiver" (1 = not at all, 7 = very much) and "only trying to deliver information to the receiver" (1 = not at all, 7 = very much). The results showed that the informative intention of the participants was higher in the casual conversation condition ($M = 4.92$) than in the persuasive intention condition ($M = 3.71$, $t(23) = 3.10$, $p < 0.1$), while the persuasive intention was higher in the heated discussion condition ($M = 5.67$) than in the informative intention condition ($M = 4.17$, $t(23) = 5.87$, $p < 0.01$), thus, supporting our manipulation.

Design and participants

We tested Hypotheses 1 and 2 in Study 1 by applying a "2 × 2" between-subjects factorial design for undergraduate and graduate students at a university in Seoul, Korea. The experimental factors in this study were (1) the retransmitters' WOM intentions (informative vs. persuasive) and (2) the relative expertise level of the retransmitters and senders (high vs. low). We developed hypothetical scenarios based on the pretest results and randomly assigned 120 students who had responded to our questionnaires to one of the four experimental conditions.

Procedure and stimuli

First, we presented the participants with a scenario involving the transmission of WOM information about the F1 Grand Prix, including the information source (i.e., either their mothers or the car magazine reporter). Next, we measured the relative expertise of both information sources. Subsequently, we presented the participants with situations in which they were each asked to engage in either a casual

conversation or a heated discussion with a friend to deliver the WOM information and asked them about the intention with which they would deliver the message to their friends in each situation. Next, we estimated the likelihood that the participants would distort WOM information or its source when relaying the WOM message to their friends.

In real life, a person may typically experience guilt about not telling the truth when distorting information. Guilt is a form of anxiety with characteristics similar to regret in terms of mistakes and self-criticism (Izard, 2013; Lascu, 1991; Mosher, 1980). When distorting information, people fear their credibility might suffer when their distortions are revealed (Keltner & Buswell, 1997). Consequently, people may hesitate to distort information because of the anticipated resultant guilt and shame (Kang et al., 2013). Thus, the guilt that participants with persuasive intentions experience during the process of distortion may also play a role in information distortion during transmission. We tested this proposition by developing two measures of guilt based on previous research (Harder & Zalma, 1990), i.e., "I felt a sense of guilt when delivering the information" and "I felt uncomfortable when delivering the information" (1 = not at all, 7 = very much), and asked participants to respond to these measures after answering questions about the likelihood of information distortion.

Last, we measured the participants' perceived importance of, familiarity and involvement with, and interest in the F1 Grand Prix. Subsequently, we briefed the participants about the experiment's objectives and provided them with small gift tokens.

Measurement

We measured the retransmitters' WOM intentions and the relative expertise of the information sources using the same questions used in the pretest to measure the dependent variables in the following way. First, we developed measures for the likelihood of WOM information distortion by modifying the questions used by Argo et al. (2006) (1 = distort and deliver the information, 7 = deliver the original information; 1 = deceive the receiver, 7 = do not deceive the respondent; 1 = hide the truth about the information, 7 = do not hide the truth of the information). Second, we measured WOM information source distortion using two semantic-differential scale measures (1 = did not reveal the original sender, 7 = reveal the original sender; 1 = did not assert that the original sender said so, 7 = emphasized that the original sender said so). Next, we averaged multiple measures of each dependent variable to create a single composite measure based on the high Cronbach's α scores (WOM information distortion likelihood 0.91, WOM information source distortion 0.81).

Results

Manipulation checks

In the informative intention condition, participants delivered the WOM information, intending to provide this information to the receivers ($M = 5.05$) rather than

influencing them $(M=2.18, t(118)=10.10, p<0.01)$. In the persuasive inten-
tion condition, participants delivered the WOM information with the intention of
influencing $(M=4.76)$ rather than merely providing the information to receivers
$(M=3.95, t(118)=3.28, p<0.01)$. Additionally, the participants perceived the send-
ers' expertise as being lesser than their own expertise when the information sources
were their mothers $(M=3.89)$ rather than the car magazine reporter $(M=5.01,
t(118)=4.44, p<0.01)$.

Likelihood of WOM information distortion

The results showed that retransmitters with persuasive intentions $(M=5.45,
SD=1.48)$ were more likely to distort WOM information than those with informa-
tive intentions $(M=5.99, SD=1.12, F(1,116)=4.69, p<0.05)$. Additionally, we
analyzed the covariance test to establish that the participants' feelings of guilt did
not have a statistically significant impact on the likelihood of information distortion
$(F(1,116)=0.35, p>0.1)$. Thus, Hypothesis 1 was supported.

Information source distortion

The two-way interaction effect of the retransmitters' WOM intentions and expertise
relative to that of the original senders' on the distortion of the information sources
in the WOM retransmission context was marginally significant $(F(1,114)=3.03,
p=0.08)$. As shown in Fig. 1, when the retransmitters perceived their relative exper-
tise as being greater than that of the original senders, those with persuasive inten-
tions $(M=3.62, SD=1.52)$ were more likely to distort their WOM information
sources than those with informative intentions $(M=4.57, SD=1.25, F(1,57)=6.39,
p<0.05)$. In contrast, when the retransmitters perceived their relative expertise
level as being lower than that of the senders, there was no significant difference
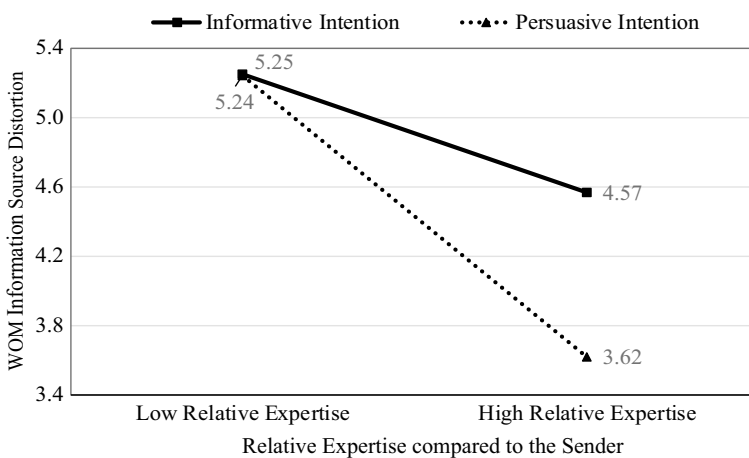

Fig. 1 Interaction effect of WOM intention and relative expertise. *Note A* lower score means a greater
likelihood of information source distortion

in the likelihood of information source distortion between those with informative intentions ($M=5.24$, $SD=1.41$) and those with persuasive intentions ($M=5.25$, $SD=1.22$, $F(1,56)=0.00$, $p>0.1$). Additionally, the participants' feelings of guilt did not have any intervening effects ($F(1,114)=1.73$, $p>0.1$). Thus, Hypotheses 2–1 and 2–2 were supported.

Discussion

The analyses showed that the WOM retransmitters' intentions could influence the distortion of WOM information (including source distortion). Specifically, we found that retransmitters with persuasive intentions were more likely to distort WOM information than those with informative intentions. Moreover, the relative expertise of the retransmitters and the original senders also affected WOM source distortion. Retransmitters with persuasive intentions who perceived their expertise regarding WOM information as greater than that of the original senders were more likely to distort the WOM information sources. However, we did not find evidence of such distortion among retransmitters with informative intentions.

Although the results of this experiment supported Hypotheses 1 and 2, it could benefit from a few improvements. First, the experiment utilized unfamiliar information that did not require a high level of expertise (F1 Grand Prix) to test the hypotheses. However, WOM retransmitters may not feel like they should retransmit information when they have excessively low levels of relevant prior knowledge and familiarity with the event. Second, this experiment manipulated the expertise levels of the WOM transmitters by designating them as either a reporter or the mothers of the participants, making objective judgments of the information source difficult. We addressed these issues in Study 2 by altering the information retransmission situation and using an objective information source to enhance the realism of the experiment, thereby enhancing the overall robustness of the study.

Study 2

Purpose

We had two main aims in conducting Study 2. First, we further investigated how the retransmitter's intention influences information content distortion (i.e., exaggeration or minimization) in the WOM retransmission context. Second, we aimed to verify the information distortions in the context of online WOM retransmission via newer media. Recognizing that active information sharing occurs in online spaces, we focused on the retransmission context of social media channels. Therefore, participants in this study acquired information from the original transmitter via social media channels and were asked to respond about how they would retransmit the information and if they would distort its contents. This situation reflects how strangers share various types of information across social media. Furthermore, it enabled us to use a confirmed objective source as the original transmitter.

Additionally, we identified how Study 1's design could be improved and applied these improvements to Study 2 to enhance its robustness. For this purpose, we first sought to boost participants' willingness to engage in information retransmission by creating a situation in which they must search for and provide the right information. More specifically, we informed the participants that they were about to discuss the purchase of a Bluetooth speaker with their friends and gave them actual Bluetooth speaker information (SONY "LSPX-S2 Glass Sound Speaker"). Second, since the intentions to retransmit information and distort its content may independently occur, in Study 2, we first measured the participants' actual willingness to retransmit the information to see if there was any difference between groups. Last, to enhance the validity of this research, we asked the participants to write down the content they would retransmit, which enabled us to conduct a content analysis.

Design and participants

Since we assumed that content distortion depends solely on retransmission intentions, Study 2 employed a two-factor design (retransmitter's WOM intention: informative vs. persuasive). We recruited 86 students attending universities in Seoul to participate in this study.

Procedure and stimuli

Based on previous research, we chose Facebook as our retransmission channel from the various existing social media channels (Dubois et al., 2011).

We first asked the participants to read about "a situation where [the participant] must purchase a Bluetooth speaker to be used with a roommate in the living room" and to visualize the situation. Next, we showed them an artificial Facebook post wherein Eric Lee introduced SONY's "Glass Sound" Bluetooth speaker. Unlike Study 1, this post described both the positive and negative features of the product to better mimic ordinary information retransmission activities that may occur on social networking services (SNSs) (see Appendix 3). Next, participants were asked to observe the information Lee provided and respond whether they were willing to retransmit this information.

Participants who confirmed that they were willing to retransmit the "SONY Glass Sound" information were asked to complete the retransmission intention manipulation task. In the informative intention condition, participants were told the following: "You think the SONY Glass Sound Speaker is an alternative worth your consideration and now will send a message to deliver Lee's information to your roommate." Meanwhile, in the persuasive intention condition, participants were told the following: "You decide the SONY Glass Sound Speaker is the most suitable and now will send a message to persuade your roommate." Next, we asked the participants in both conditions to rate the likelihood that they would distort (exaggerate or minimize) the information content and then write the actual messages they would provide to their hypothetical roommates.

⁂

After writing their messages, the participants were instructed to complete the manipulation check questionnaire about retransmission intentions and control variables, including their prior knowledge of Bluetooth speakers and their familiarity and involvement with such speakers. We did not measure perceived guilt in Study 2. The experiment concluded by guiding the participants to answer some demographic questions.

Measurement

We measured the participants' retransmission intentions (informative vs. persuasive) and various control variables, such as prior knowledge of and familiarity and involvement with Bluetooth speakers, using the same questions as the pretest and Study 1. Next, we measured their willingness to retransmit the information and their likelihood of content distortion as follows:

First, we estimated participants' willingness to retransmit the information by modifying Chen's (2017) approach. We asked them to rate their level of agreement with the statement, "I would like to transmit to a roommate the information about SONY Glass Sound," on a seven-point semantic-differential scale (1 = unlikely; 7 = likely).

Second, based on the definitions presented in DePaulo et al. (1996), we measured WOM information content distortion using two scales asking participants about their willingness to exaggerate/minimize the information (1 = deliver the information as is, 7 = exaggerate; 1 = deliver the information as is, 7 = minimize the information). To further examine participants' content distortion of the retransmitted information content, we asked them to write down the actual message they would send, which we then analyzed using content analysis.

Results

Manipulation checks

We found that all the participants exhibited the same level of willingness to retransmit the information regardless of their retransmission intentions ($M_{\text{informative}} = 4.89$, $M_{\text{persuasive}} = 4.74$, $t(84) = 0.451$, $p > 0.1$). Furthermore, all participants were sufficiently involved in information retransmission, and their overall willingness to retransmit the information was significantly higher than the mid-point ($t(85) = 5.011$, $p < 0.001$).

In the informative intention condition, participants delivered the WOM information to simply share it with the receivers ($M = 5.89$) rather than influence them ($M = 5.31$, $t(84) = 2.02$, $p < 0.05$). On the other hand, in the persuasive intention condition, participants delivered the WOM information to influence ($M = 5.64$) receivers rather than merely share the information with them ($M = 3.53$, $t(84) = 6.79$, $p < 0.001$).

Additionally, we found no differences in the participants' prior knowledge of Bluetooth speakers and their familiarity and involvement with these devices between the conditions (all $ps > 0.1$).

WOM information content distortion

The results revealed that retransmitters with persuasive intentions ($M = 3.38$, $SD = 2.26$) were more likely to exaggerate WOM information content than those with informative intentions ($M = 2.23$, $SD = 1.66$, $F(1,68.37) = 7.01$, $p < 0.05$), thus supporting Hypothesis 3. However, we found no significant differences between the two intention conditions in terms of the likelihood of minimizing the WOM information content ($M_{informative} = 3.23(SD = 2.32)$, $M_{persuasive} = 4.00(SD = 2.27)$, $F(1,84) = 2.36$, $p > 0.1$).

Therefore, we concluded that differences in retransmission intentions were significant only when the retransmitters engaged in exaggerating the information, as predicted in Hypothesis 3.

Content analysis of the retransmitted WOM messages

We examined whether the participants with persuasive intentions had exaggerated the given information during WOM retransmission by performing a content analysis of the actual messages written by the participants. First, two independent coders who were blind to our hypotheses conducted dummy coding to check whether the participants had exaggerated the transmitted information or not. Specifically, the coders were asked to choose "1" if the participants had exaggerated information and "0" if they had not. Additionally, they were asked to provide the reasoning behind their judgment.

The results showed that 50 participants had exaggerated the transmitted information. According to the coders' evaluation, the most frequent type of exaggeration was emphasizing the product's attributes, which was done by 44 (88%) out of the 50 participants. Among these cases, exaggeration about the product's design was the most frequent at 36 (e.g., "this is extraordinary because of the candle-like design, unlike conventional speakers" and "I think this product will better the atmosphere of our room because of the neat and pretty design"). Other exaggeration cases were related to the sound quality (e.g., "I think it is great for listening to jazz ballad music!"), technology level, and batteries). In particular, six participants evaluated the attributes of the product negatively in accordance with their negative attitudes toward the product (e.g., "this is not attractive because the design does not feel like a speaker" and "this may be difficult to carry due to its design") or delivered the information with further emphasis on the weaknesses of the product (e.g., "this is not good because of its low sound power").

In addition to emphasizing certain product attributes, participants exaggerated the information regarding the product by expressing their thoughts and feelings about the product. Twenty-three (46%) participants commented on the additional uses of the product (e.g., use for interior and camping purposes) or provided their overall evaluation (e.g., "this will be fine for us" and "I think this will be out of stock").

Moreover, 13 (26%) participants presented a message justifying their purchase (e.g., "because we live in a normal house without excellent soundproofing, we don't need a product with powerful sound, as too much low-pitched sound causes problems" and "this product is perfect because we will use it to calm our minds while listening to classical music").

Based on the coders' categorization, we conducted binary logistic regression using one independent variable (intention: persuasive = 1, informative = 0). We obtained support for Hypothesis 3 by estimating the main effect of intention on content exaggeration ($B = 1.062$, S.E. $= 0.461$, Wald $x^2(1) = 5.319$, Exp(B) $= 2.893$, $p < 0.05$). The estimation results indicate that participants with persuasive intentions were more likely to exaggerate the contents of the given information (71.8%, $n = 28/39$) as compared to those with informative intentions (46.8%, $n = 22/47$) (Table 1).

Therefore, the content analysis results also support H3, confirming that people with persuasive intentions are more likely to exaggerate the contents of the message.

Discussion

In Study 2, we fabricated a WOM communication situation on social media (Facebook) for our experiment, where participants acquired information (comprising both positive and negative content) from an objective source that had no direct relationship to them. We found evidence that participants with persuasive intentions were more likely to exaggerate information on social media channels than those with informative intentions (H3). Furthermore, we analyzed the contents of the retransmission messages sent by the participants. The content analysis performed by two independent coders showed that people with persuasive intentions were more likely to exaggerate information than people with informative intentions.

General discussion

The key contribution of this paper is that it expands WOM research in the following ways. First, although several studies have examined WOM, research on information distortion during retransmission is limited. The increasingly prevalent nature of retransmission and distortion, wherein individuals repost celebrities' posts or edit original content to suit their purposes and tastes, highlights the importance of examining information distortion in the retransmission context. However, to the best of

Table 1 Results of the cross tabulation analysis

	Content exaggeration		Total
	No exaggeration	Exaggeration	
Informative intent	25 (53.2%)	22 (46.8%)	47 (100%)
Persuasive intent	11 (28.2%)	28 (71.8%)	39 (100%)

$x^2 = 5.468$, $p < 0.05$; $r = 0.252$, $p < 0.05$

our knowledge, relevant research regarding this topic is virtually nonexistent. One contribution of this paper is that we provided a review of previous studies regarding retransmission and content distortion and examined these phenomena based on the factors that influence information distortion in both the offline (Study 1) and the online (Study 2) contexts.

Second, since social psychology and communication studies have proven that information is disseminated via networks, WOM retransmission involves the retransmitters, the original senders, the receivers, and even the WOM information itself. Thus, to further understand the factors involved in information distortion, we focused on the role of retransmitters and their relationships with other elements. Specifically, to develop a systematic and comprehensive understanding of information distortion in the WOM retransmission context, we sought to understand the effects of retransmitters' intentions (informative vs. persuasive) and the difference in the expertise levels between the original senders and the retransmitters.

Third, the success of a WOM marketing campaign depends on both the rate of WOM information dissemination and the ways in which this information is distorted. In particular, information is often retransmitted without any discretion and specific sources (Stoica, 2020). Companies prefer the diffusion of undistorted information because the reckless distortion of corporate messages is inevitable regardless of distorters' intentions and such distortions have unpredictable consequences. However, on a positive note, distortion encompasses all types of distortion, and companies may find positive information distortion desirable. Therefore, gaining a comprehensive understanding of the overall patterns of information diffusion requires understanding the distortion that occurs in the intermediate steps of the WOM information delivery process. This knowledge is required to enable companies to develop comprehensive and effective WOM marketing strategies that reflect information modification patterns throughout the WOM information diffusion process rather than focusing solely on the initial steps of virality. Therefore, we examined distortion tendencies in WOM retransmission in both the offline and the online (social media) contexts. Furthermore, our analysis regarding the dissemination of product information and the information distortion that occurs in this process elucidates WOM information diffusion and provides meaningful insights into the use of WOM diffusion in marketing.

Notably, the data of the present research was collected from Asian consumers (i.e., South Korean). The importance of Korean business and understanding Asian consumers' psychology and behavior is fast increasing (Froese, 2020a, 2020b; Hemmert, 2020). Our paper specifically contributes to the understanding of Asian consumers, especially how they utilize WOM (Bai & Yan, 2021; Zhao et al., 2021). Future research can explore whether and how Asian and Western consumers differ in WOM and retransmission behaviors (Henrich et al., 2010; Resick et al., 2011; Shiraev & Levy, 2020).

The limitations of the present study and our suggestions for future research are presented as follows. First, this study mainly focused on WOM retransmission, wherein the information receiver transmits the information to another receiver. However, in the context of WOM retransmission, the retransmitter acts as both a sender and a receiver of information (Brown & Reingen, 1987; Inman et al., 2004; Richins,

1984). Additionally, information distortion can occur in both the transmission and the reception of information. People sometimes engage in distorting the information they have in a manner that benefits the early leader (DeKay, 2015; Russo et al., 2008). However, this study only examined distortions that occur in the transmission of information without investigating other types of distortions, such as the selective perception that may occur when receiving information. Thus, future research must examine the information distortion that occurs in both the reception and the transmission of information by the retransmitter and further investigate the information distortion that may occur during the switch from information reception to information transmission.

Second, the factors that affect information distortion in the WOM retransmission context are not limited to the retransmitter's intention, which was investigated in this study. There are other variables, including personal characteristics (Lin et al., 2021), such as traits (Lai et al., 2020), age (Sudhir et al., 2018), and prior knowledge (Melumad et al., 2021); the product subject's attributes in WOM transmission; or contextual characteristics, such as the subject of WOM transmission or media. Therefore, additional studies should be conducted regarding the various moderating factors.

Third, we categorized WOM information distortion into two types: exaggeration and minimization. Therefore, we examined whether the retransmitters' intention was to exaggerate or minimize the information independently. In Study 2, we found that individuals with persuasive intentions are more likely to exaggerate information content than those with informative intentions. We found that participants were likely to minimize information, although the differences in their intentions were not significant in this regard. We suspect that these exaggeration and minimization behaviors stem from the fact that we simultaneously highlighted the positive and negative aspects of the target product. More specifically, while participants—particularly those with persuasive intentions—exaggerated the information that supported their points, they simultaneously minimized information that contradicted their points regardless of their intentions. Although we captured these information content distortion dynamics, questions regarding the impact of information valence on individuals' exaggeration or minimization behaviors remain. Therefore, further research should examine how individuals exaggerate or minimize certain types of information, particularly when the information includes content that both supports and contradicts the purpose of their retransmission. Additionally, while this study included omission as a subset of minimization, some previous studies have viewed omission and minimization as two distinct distortion types (Ekman, 2009; Metts, 1989). Thus, future research should examine other types of information distortion, including complete distortion and omission, to develop a more comprehensive WOM information distortion framework.

Lastly, this study utilized certain scenarios to verify the hypotheses. For Study 2, we developed a more specific context and scenario as well as actual transmission content to enhance realism. However, this situation still does not reflect reality. Therefore, researchers could generate more robust results by observing the retransmissions of individuals that actually retransmit the information (i.e., customer clusters).

Appendixes

Appendix 1: Manipulation of relative expertise of the information source and WOM information (Study 1)

You just heard the following story from 'an automobile magazine journalist' (relatively high expertise) / 'your mother' (relatively low condition).'

Please read the following and answer the questions as honestly as possible.

The City of Yeongam in Jeollanamdo Province will host the F1 Grand Prix 2010. F1 is a car race; the term 'F1' combines the English word "Formula" and the number "1" (indicating the best). The average price of a racecar used in the F1 Grand Prix is about 10 billion won. The F1 Grand Prix is the most popular automobile-related sports event. The drivers earn a lot of money. The companies that manufacture F1 automobiles use the race to their advantage too.
In addition, it brings many economic spillover effects to the hosting country.

Appendix 2: WOM retransmission intention manipulation (Study 1)

After a few days, you take part in a light discussion (<u>informative intention condition</u>) / a serious discussion (<u>persuasive intention condition</u>) with a friend who is very interested in F1 Grand Prix.

Please answer the following questions regarding how you would deliver the information you just read as honestly as possible.

Appendix 3: WOM information (Study 2)

Eric Lee
18 Hours

I'd love to share my impressions of the SONY LSPX−S2 Glass Sound Speaker, which uses a patented organic glass tube technology. The speaker vibrates the organic glass tubes to project sound in 360 degrees and has a clearer and more transparent sound than other speakers in the same price range. So, it is definitely suitable for listening to vocal−oriented music, jazz, and ballad genres. In addition, this speaker's accessible Bluetooth connection and an embedded battery that lasts up to 8 hours makes it appropriate for portable use.
However, it has the disadvantages of having relatively lower sound power and small woofer size, meaning it can generate neither powerful beats nor rich bass sounds. Therefore, people who enjoy rock/dance music or those who seeking a speaker for parties may be disappointed.
The product has detailed and sophisticated design, and overall is quite appealing. However, it may seem a bit unfamiliar to people who prefer classical and masculine designs.

Appendix 4 WOM retransmission intention manipulation (Study 2)

Informative Intention Condition

You and your roommate have searched for various speakers but have yet to find the right one. After reading Lee's post, you think the "SONY LSPX-S2 Glass Sound Speaker" is an alternative you should consider. Now, you want to discuss buying "SONY Glass Sound" with your roommate.

To deliver the information that Lee introduced, what would text?

Persuasive Intention Condition

You and your roommate have searched for various speakers. After reading Lee's post, you decide you want to buy the "SONY LSPX-S2 Glass Sound Speaker." However, your roommate seems to prefer another speaker. Now, you want to persuade your roommate to buy the "SONY Glass Sound."

How would you deliver Lee's information to persuade your roommate? What you text?

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