ANDREW M. BAKER, NAVEEN DONTHU, and V. KUMAR*

This study investigates how the valence, channel, and social tie strength of a word-of-mouth (WOM) conversation about a brand relate to the purchase intentions and WOM retransmission intentions of WOM recipients. The analysis uses a nationally representative sample of 186,775 individual conversations about 804 different brands. The authors find insights linking WOM valence, WOM channel, and social tie strength that could not be revealed if the WOM conversations were analyzed in an aggregated form. The findings contribute to research that investigates differences between offline WOM and online WOM. The authors find that the relationship of WOM valence with purchase intentions is exacerbated when the conversation occurs offline, whereas offline conversations tend to be more strongly associated with WOM retransmission intentions regardless of the conversation's valence. The results also provide insights into how interpersonal characteristics influence WOM outcomes. Specifically, the authors find that the strength of the social tie relationship tends to influence a WOM receiver's intentions to purchase a brand; however, social tie strength has a much weaker association with a consumer's WOM retransmission intentions.

Keywords: word-of-mouth valence, offline word of mouth, branding, word-of-mouth retransmission, purchase intention

Investigating How Word-of-Mouth Conversations About Brands Influence Purchase and Retransmission Intentions

Industry studies report that, on average, 2.4 billion daily conversations take place that involve a brand (Keller and Fay 2012), and marketing managers continue to invest heavily in ways to directly influence and understand consumer word-of-mouth (WOM) patterns (Berger and Schwartz 2011; Libai, Muller, and Peres 2013). This investigation endeavors to shed some light on the consequences of these brand conversations on consumers. Specifically, we investigate which types of WOM conversations are more or less likely to stimulate consumers' intention to buy the brand or retransmit the received WOM conversation to others. Our investigation is at the individual WOM conversation level; within each WOM conversation, we capture the valence of the brand sentiment, the channel of the conversation's occurrence, and the strength of the social relationship between those in the conversation. As such, our study is in line with the recent call to investigate WOM impact in this "disaggregated" form (King, Racherla, and Bush 2014, p. 176) to better understand how receivers are

influenced by WOM. It has been noted that aggregate-level WOM analysis tends to assume that consumer impact of WOM is equal across WOM (King, Racherla, and Bush 2014). Therefore, researchers have called for disaggregated WOM analysis to test for differences in impact across different types of WOM. Analyzing WOM at the conversation level is also important to brand managers because it provides more precise insights into which forms of WOM conversations are most strongly associated with managerially desired consumer intention outcomes. Given that brand managers are often concerned with monitoring and managing desirable forms of consumer WOM, the results of this study enable managers to sharpen the focus of their efforts.

Two important outcomes of consumer WOM are stimulating consumer purchase and motivating the retransmission of WOM. Although both outcomes have received extensive attention in marketing investigations independently, simultaneous investigation of how WOM and brand drivers relate to each outcome is scarce. The current study complements and extends extant research by empirically evaluating how pertinent WOM variables differently relate to both purchase and WOM retransmission intentions. By assessing both purchase and WOM retransmission intentions, our findings enable managers to understand which type of WOM conversations are most relevant to their immediate marketing objective.

This study analyzes nearly four years of organic offline and online WOM data for 804 brands. The data come from TalkTrack, a longitudinal database that tracks WOM from a nationally representative panel of U.S. consumers. By analyzing WOM impact at the level of individual conversations, we are able to properly investigate both the main and the interaction effects among conversation-level WOM characteristics. The consequence of this is that we identify several unique empirical insights that could not have been investigated if we had only aggregated WOM about brands. Furthermore, our study focuses on the *impact* of WOM conversations, whereas recent studies have focused on the *volume* of WOM conversations. For example, the studies of Lovett, Peres, and Shachar (2013), Berger and Iyengar (2013), and Berger and Milkman (2012) use different methodologies and contexts but aim to answer the question "What generates more WOM?" Our study is distinct in providing insights into the question "What type of WOM matters the most?" Indeed, the aforementioned articles do not distinguish between the generation of positive WOM (PWOM) and negative WOM (NWOM); nor do they assess how different types of WOM can differently affect the behavioral intentions of WOM recipients.

As previously mentioned, this study investigates WOM at the conversation level (i.e., immediate consumer response to characteristics specific to the conversations). The selection of WOM variables for this study was motivated by two considerations. First, we selected the variables that would encompass all foundational elements of transactional interpersonal communication frameworks (Barnlund 1970; Shannon 1948). As the second criterion, we identified the communication framework variables that research has previously identified as having a substantial impact on consumer outcomes. Regarding the message of WOM conversation, research has established the valence of received consumer content as a driver of consumer response (Berger, Sorensen, and Rasmussen 2010; Singh 1990). Furthermore, the communication channel—in particular the difference between offline and online WOM—can alter what consumers talk about with others (Berger and Iyengar 2013; Lovett, Peres, and Shachar 2013). Finally, the strength of the social relationship can affect how a message recipient responds to WOM (Brown and Reingen 1987; Trusov, Bodapati, and Bucklin 2010). For each of these three WOM conversation characteristics, there are different theoretical accounts for how they should relate to a WOM recipient's behavioral intentions. In the following section, we define the outcome variables in our study and then summarize the differing perspectives about how WOM characteristics should empirically relate to behavioral intention outcomes.

DEFINITIONS AND RESEARCH EXPECTATIONS

This study defines a WOM conversation about a brand as an interactive exchange of information between two or more consumers that is not commercially motivated. This definition is consistent with historical marketing literature on WOM (Arndt 1967), but some clarification is necessary to define the boundaries imposed by the definition we use herein. First, this definition can include online dialogue between consumers so long as there is some interactive component between the consumers. For example, a conversation about Ivory soap on Twitter with a complete stranger would qualify as a WOM conversation; however, reading a product review on Amazon.com would not (because it is not interactive). Because of our focus on WOM conversations, our study is not meant to include in its scope any "eWOM" (i.e., online WOM) that is not explicitly a conversation; Berger, Sorensen, and Rasmussen (2010) and Chevalier and Mayzlin (2006) are examples of research that has studied such nonconversational eWOM. Any comparisons of such studies to our present investigation should be done with great caution.

In this study, we define "purchase intentions" as the WOM recipient's degree of motivation and willingness to eventually purchase the brand discussed in the WOM episode. Similarly, we define "retransmission intentions" as the WOM recipient's degree of motivation and willingness to eventually pass along the content of the WOM communication about the brand to another person. This is similar to the concept Berger and Milkman (2012) call "message transmission." De Angelis et al. (2012, p. 552) use the term "WOM transmission" to describe when "consumers pass on information about experiences with products and services they have heard occurred to someone else."

Although both purchase and WOM retransmission intentions deal with consumers' calculation of future behavioral action toward a brand, they have several important differences. First, purchase and WOM retransmission intentions have different costs and risks that consumers are likely to incorporate into their intention estimation. Typically, consumer purchase intentions are influenced by calculations that include practical cost considerations (e.g., price) and other physical resources necessary to make a purchase. Conversely, spreading WOM is relatively cheap in terms of physical costs; yet what consumers choose to talk about with others is partly informed by the social risks and benefits estimated to derive from talking with others (De Angelis et al. 2012). Second, purchase intentions are informed by both the practical benefits estimated to come from a brand and considerations about how the purchase may help achieve social goals, such as self-presentation and conformance to social norms (Ajzen 1991). Conversely,

WOM retransmission intentions are usually based on how WOM can serve social goals, such as self-enhancement (Berger and Iyengar 2013). Given these differences between purchase and retransmission intentions, we proceed by considering how a WOM conversation's valence, channel, and participants (i.e., social tie strength) are expected to similarly and differently relate to purchase and retransmission intentions.

How WOM Characteristics Shape Purchase and WOM Retransmission Intentions

The role of WOM valence. The valence of WOM is the attractiveness (positivity) and/or averseness (negativity) of the information about a particular brand in a conversation. Content with strong valence typically stimulates more consumer arousal and interest than neutral content (Berger and Milkman 2012). Consumer purchase behaviors as a result of valenced information tend to include approach/avoidance responses that align with the directional valence of the information, although research has identified factors that moderate this response (e.g., Berger, Sorensen, and Rasmussen 2010; Dempsey and Mitchell 2010).

Research has established that PWOM typically motivates brand purchase or other positive brand outcomes (e.g., referrals), whereas NWOM generally reduces purchase intentions and inhibits other brand behaviors (Bansal and Voyer 2000; Ryu and Feick 2007). Furthermore, previous research has suggested that the relative effects of PWOM and NWOM on purchase are asymmetric. That is, relative to neutral WOM, NWOM will typically have a larger effect than PWOM because the NWOM content about the brand is framed as a loss (Tversky and Kahneman 1991). East, Hammond, and Lomax (2008) find that NWOM has a larger effect than PWOM on a consumer's purchase probability when the pre-WOM purchase probability was greater than 50%. Research on WOM has provided a less clear picture about how mixed (ambivalent) WOM conversations about a brand will tend to relate to purchase intentions when compared to neutral WOM. On one hand, consumers often consider two-sided messages to be more credible; this perspective implies mixed WOM could boost the effect of the positive sentiment component of mixed WOM on purchase intentions. From another perspective, mixed WOM sentiment could result in lower purchase intentions than neutral WOM because of the typically dominating asymmetrical effect of the negative sentiment component of the mixed WOM message (Cheung and Thadani 2012).

How the valence of a WOM message influences intentions to retransmit a conversation about a brand should differ from how valence affects purchase intentions. A great deal of research has examined the drivers of initial PWOM and NWOM transmission (Alexandrov, Lilly, and Babakus 2013; De Matos and Rossi 2008; Higie, Feick, and Price 1987). However, less research has directly explored how message valence shapes retransmission, despite evidence that indicates the causal mechanisms for WOM transmission and retransmission are different (De Angelis et al. 2012).

Research has shown that self-enhancement theories, particularly the need to positively present and self-enhance, help explain WOM retransmission (secondhand accounts). Alexandrov, Lilly, and Babakus (2013, p. 532) find that self-enhancement motives had the strongest total effect on sharing

PWOM. De Angelis et al. (2012) find that when the need to self-enhance is high, people tend to discuss negative experiences when the brand is experienced secondhand. Berger and Milkman (2012) study the emotional content of media and find that affect-laden content, regardless of positive or negative emotions, is also likely to be shared. We propose that message valence will relate to WOM retransmission intentions in a similar manner. Specifically, PWOM should be the most likely form of WOM to be retransmitted because it most closely aligns with common self-enhancement goals, such as being interesting and presenting oneself as positive (Berger and Milkman 2012). However, NWOM and mixed WOM about a brand should also be more commonly retransmitted than neutral WOM because such content is still more interesting and, thus, more congruent with achieving self-enhancement goals. Thus, NWOM, when compared with neutral WOM, should tend to be associated with higher WOM retransmission intentions but lower purchase intentions.

How channel shapes the impact of WOM. Online WOM differs from offline WOM in that it is not face to face, it is often presented in a highly structured format, it tends to be asynchronous (Berger and Iyengar 2013), it is usually incapable of carrying nonverbal forms of communication (Dennis and Kinney 1999), and it can include commercially motivated "artificial" WOM that is more ambiguously identifiable by the recipient (Cho et al. 2011).

Media richness theory posits that offline communication will typically have a greater impact on behavioral responses than online WOM because offline WOM delivers more accurate and detailed information to act on due to rapid communicator adaptability (communicator can ensure accurate transmission of the intended message) and more rich and complete communication of nonverbal cues (Burgoon and Nimmo 1980; Daft and Lengel 1986). Offline PWOM about a brand should result in greater purchase intentions than otherwise equivalent online PWOM, whereas NWOM or mixed WOM offline should have a stronger negative effect on purchase intentions than otherwise equivalent online WOM.

For WOM retransmission, a self-enhancement account suggests that the additional richness of the nonverbal communications in offline WOM makes PWOM, NWOM, and mixed WOM seem even more interesting and worth sharing than their equivalent online WOM counterparts. Interestingly, this rationale for offline WOM resulting in greater retransmission intentions than online WOM is actually consistent with research that has shown interesting brands are talked about online more often than offline (Berger and Iyengar 2013; Lovett, Peres, and Shachar 2013). These studies identify how online channels afford people more time to think of interesting brands to talk about (a "what kinds of brands will be talked about" explanation), whereas the present perspective is that when brand is held constant, offline conversations should provide more interesting content to share with others in the future (an "impact of a WOM conversation" explanation).

Alternatively, online WOM could prompt higher retransmission intentions than otherwise equivalent offline WOM conversations because WOM that initially occurs in an online communication channel gives consumers an instantaneous means to find new people to engage with in another online conversation. Although this perspective may hold when it comes to sharing or reposting online content (e.g., clicking the "retweet" button on Twitter), we argue that this viewpoint is

less tenable in terms of retransmission intentions of an actual WOM conversation. Unlike simply clicking to share eWOM, retransmitting WOM conversations requires some redesigning and tailoring of the original conversation. Thus, the difference between online and offline channels is less pronounced for WOM conversations in terms of the effort required to retransmit.

How Social Ties Shape the Impact of WOM

Research indicates that the degree of social distance between consumers affects exchange (Granovetter 1983) and information transmission (Frenzen and Nakamoto 1993). Research has typically classified social tie strength into two discrete categories: strong ties and weak ties. With strong ties, members recognize the relationship's overall importance, engage in frequent relationship interaction, and usually define the relationship as "close friends" or "immediate family members." Weak ties lack valuations of enduring importance, tend to have less frequent interactions, and typically have social designators such as "acquaintances" or "strangers" (Weimann 1983). However, the dissimilarity and scarce interaction between weak social ties is argued to have one upside with regard to information dissemination in social networks: in the less common instances in which weak ties do engage in information exchange, it is much more likely that the information will be novel to recipients. In other words, weak ties interact infrequently and tend to be untrusted but are essential to spreading new information across a social network. This is the "strength of weak ties" (Granovetter 1983).

As social tie strength increases, so does the likelihood of tailored, relevant, persuasive, and personalized WOM communications. This is known as the "strength of strong ties" (Brown and Reingen 1987). This effect should apply in the case of purchase intentions; that is, a WOM recipient is more likely to take action on a WOM message received from his/her strong ties because of a generally higher level of trust in the sender and a higher level of homophily between strong ties (McPherson, Smith-Lovin, and Cook 2001). Thus, PWOM about a brand from a strong tie should be particularly salient in motivating purchase, whereas NWOM about a brand from a strong tie should result in a strong unwillingness to purchase the brand. However, NWOM from strong ties may not have as deleterious an effect on purchase intentions as might be expected. This is because the effect of increased trust on the negative sentiment from strong ties will be tempered by the tendency of strong ties to talk about more personally relevant brands (Berger, Sorensen, and Rasmussen 2010).

Regarding WOM retransmission intentions, the self-enhancement perspective and "strength of strong ties" perspective both suggest that WOM from strong ties will be more frequently retransmitted. Because strong social ties are viewed as more relevant, reliable, trustworthy, and credible, relatively less risk is associated with retransmitting the informational content received from a well-known source. Thus, self-enhancement goals can be pursued through WOM retransmission with less risk. While the strength of weak ties perspective does suggest that weak tie information will tend to be more novel, and thus perceived as more valuable for WOM retransmission, this perspective also notes that the relative distrust and skepticism toward weak ties means that even truly novel information received during a WOM conversation will be, on average, heavily devalued as a candidate for WOM retransmission.

DATA

Database

The data set of WOM conversations comes from the TalkTrack proprietary database. TalkTrack is developed and maintained by the Keller Fay Group, a marketing consulting firm specializing in providing clients with longitudinal information about U.S. consumers' WOM activity, both offline and online. On average, 700 respondents are recruited each week to participate in the U.S. panel. The respondents are selected to be demographically representative of consumers in the United States and are between the ages of 13 and 69 years.

TalkTrack respondents are asked to recall the brand and product-related WOM conversations they have had in the previous 24 hours. Initially, the TalkTrack survey instrument asks the respondent to simply quantify the number of WOM conversations they have had across a variety of 15 product categories (e.g., beverages). The TalkTrack survey prompts the respondent to name any specific brands, if any, mentioned in each conversation. Then, from a random list of no more than ten of those conversations, the respondent identifies where each conversation occurred. This is the first TalkTrack WOM conversation measure relevant to our study.

Next, TalkTrack randomly selects from ten brands mentioned in the WOM conversations (the brands are limited to ten to minimize respondent fatigue). The respondent is prompted to recollect more detailed information about what was said about each of the randomly selected brands. This recalled information provides the key measures we use in our analysis. At this point, the valence of the WOM about the brand is measured (the second key WOM conversation measure for our study). The TalkTrack system then asks the respondent to identify whether any of these conversations included the TalkTrack respondent receiving specific advice or recommendations regarding a specific brand. If the respondent did receive advice, TalkTrack captures the social relationship between the WOM sender and receiver (our third and final WOM conversation variable) and the WOM recipient's intentions to purchase the brand or retransmit the WOM about the brand as a result of the conversation (our two dependent variables). Thus, our study analyzes TalkTrack WOM conversations in which the WOM receiver receives some advice related to a specific brand from a WOM sender. The specific wordings used for the TalkTrack survey questions germane to our study are reported in Appendix A.

The TalkTrack system also captures other WOM conversation information, as well as information about the respondent. For example, it measures respondents' demographic information. Unfortunately, a limitation of our study is that we did not have data for all of the variables in the TalkTrack database. The TalkTrack database is extensive; other WOM dimensions from TalkTrack have been used in recent marketing research (Berger and Iyengar 2013).

From this database, we included in the analysis 186,775 conversations that took place between July 2006 and March 2010 and that pertained to 804 brands. In our analyzed sample, the TalkTrack respondents we analyzed provided, on average, detailed evaluations of 1.37 brands. We excluded TalkTrack "brands" that were actually people (e.g., political figures, celebrities) or media properties (e.g., television shows, movies, video games). The brands in our sample had 232.31 detailed WOM conversations on average (median = 81, σ = 545.40). As we explain in detail when we present the analysis, the fundamental unit of analysis for our investigation is each brand in a WOM conversation and the resulting behavioral intentions from that conversation.

TalkTrack Measures

Intentions to purchase and retransmit. We operationalized purchase and retransmission intentions using respondents' answers to two TalkTrack survey questions that asked how likely the respondent was to (1) buy the brand and (2) retransmit the WOM about the brand, as a result of the WOM conversation. Each response was on an 11-point scale (0 = "not at all likely," and 10 = "extremely likely"). Purchase intentions had a mean of 7.43 (σ = 2.17), and retransmission intentions had a mean of 7.47 (σ = 1.66). The relatively high means for the intention measures are partly due to the large percentage of PWOM (61.58%) about brands in the sample. The relatively high intention scores should not be interpreted as directly indicative of WOM's influence on actual behavior. Previous research on the intention–behavior relationship has demonstrated that measured intentions are imperfect predictors of actual purchase behavior and that the empirical relationship between measured intentions and actual behavior tends to be positive but nonlinear, and stated intentions tend to overestimate actual purchases (Bemmaor 1995; Manski 1990).

Purchase and retransmission intentions are different—in their definition, their antecedents, and the factors that constrain a consumer's ability to manifest their intention into behavior. At the same time, the two constructs are also expected to positively correlate. We expect people to be inclined to talk about brands they are also willing to purchase. Indeed, the bivariate correlation between average purchase and retransmission intention scores with respect to PWOM demonstrated positive correlation (r = .45, *p* < .001). However, there was more discrepancy between purchase and retransmission intentions with respect to NWOM (r = .12, *p* < .001), neutral WOM (r = .39, *p* < .001), and mixed WOM (r = .37, *p* < .001).

WOM valence. TalkTrack panel members reported the valence of the information about the brand in the WOM conversations as being either generally positive, negative, neutral, or mixed. Neutral WOM conversations typically contain strictly informational content about a brand; conversely, mixed WOM includes brand sentiment with both positive and negative elements. We used dummy codes to operationalize WOM valence. Most conversations about brands were positive (61.58%) or mixed (17.34%). A smaller proportion of WOM conversations were negative (8.57%) or neutral (12.51%); thus, the ratio of PWOM to NWOM was 7.19 to 1. This proportion is consistent with reports in other studies; Carl (2006) reports WOM activity as 71.1% positive, 20.6% neutral, and 7.7% negative

(PWOM to NWOM ratio of 9.23 to 1). Like the TalkTrack database we used, the aforementioned study also collected WOM using survey instruments that aided respondents as they recalled recent WOM activity. Table 1 reports the percentages of different WOM valences by channel and social tie strength in our sample.

WOM channel. We dummy-coded the channel of each WOM conversation as either offline or online according to the respondent's recall of the conversation channel (offline = face to face or telephone; online = e-mail, text message, blog, online chatroom, Twitter, or social networking site). We classified telephone conversations as offline. Although phone conversations do not enable respondents to see nonverbal communications, they carry all the other signals linked with rich channels of communication (e.g., synchronicity, transmission of subtle tonal inflections, interactivity with immediate feedback) (Daft and Lengel 1986; Dennis and Kinney 1999). Berger and Iyengar (2013) also use this categorization scheme.

Most conversations occurred offline (94.84%). Our sample is more extreme in this dimension than those of other studies (e.g., Fay and Thomson 2012), which have typically reported approximately 90% offline WOM. This discrepancy is mostly due to our sample selection of brands; our exclusion of media properties (e.g., television shows) favors a relatively higher rate of offline WOM because such properties have particularly voluminous online WOM (Lovett, Peres, and Shachar 2013). This atypical ratio of offline to online WOM is not a significant concern, however, because our research objective is to assess the *impact*, not the *volume*, of each WOM channel.

Social tie strength. We coded tie strength in the WOM dyad as weak or strong. Respondents identified their relationship with the person in the WOM episode as spouse/partner, family member, best friend, or personal friend (coded as strong tie), or as coworker, other acquaintance, or stranger (coded as weak tie). Categorization of social relationship designators into strong and weak ties was informed by De Bruyn and Lilien (2008), who use Frenzen and Davis's (1990) social strength scale to identify the mean social tie strength of the same social relationship designators as in this study. Most conversations occurred between strong social ties (80.99%); 19.01% of WOM was between weak ties.

WOM volume. We included overall WOM volume about a brand as a proxy to control for potential WOM repetition

Table 1
PROPORTION OF WOM BY VALENCE, CHANNEL, AND SOCIAL TIE STRENGTH

	Offline		*Online*		
	Strong	*Weak*	*Strong*	*Weak*	*Total*
Positive	48.47%	10.15%	2.40%	.55%	61.58%
Negative	6.15%	1.85%	.45%	.12%	8.57%
Neutral	9.68%	2.24%	.45%	.15%	12.51%
Mixed	12.59%	3.71%	.80%	.25%	17.34%
Total	76.90%	17.94%	4.09%	1.07%	100.00%

Notes: Valences = positive, negative, neutral, and mixed; channels = online and offline; social tie strengths = strong and weak.

effects because the TalkTrack data do not identify the total number of same-brand WOM conversations in which a respondent has recently participated. This measure was a simple count of all WOM conversations in the TalkTrack database for a given brand, divided by 1,000 and mean-centered (M = .000, SD = 1.83, min = −1.52, max = 5.092).

Product categories. We organized brands from the database into 14 categories: automotive, beauty/personal care, beverages, children's products, financial, food/dining, health care, home, household products, media/entertainment, retail/apparel, technology, telecom, and travel. The three most populated categories were food/dining (21.02% of brands), retail/apparel (12.19%), and beverages (11.19%). A complete description of the volume of WOM across categories appears in Appendix B.

ANALYSES

To evaluate our research expectations for how WOM conversation valence, channel, and social tie strength relate to purchase and retransmission intentions, we use the following linear mixed models for purchase intentions ($PURCHASE_{i,j,k}$) and retransmission intentions ($TRANSMIT_{i,j,k}$). We depict them using standard notation as follows:

$$(1) \quad PURCHASE_{i,j,k} = \xi_{0,0,0} + \sum_{a=1}^{15} \left(\beta_{a,0,0} \times x_{i,j,k} \right)$$
$$+ \sum_{b=1}^{2} \left(\gamma_{0,b,0} \times x_{j,k} \right)$$
$$+ \left(w_{0,k} + u_{0,j,k} + r_{i,j,k} \right);$$

$$(2) \quad TRANSMIT_{i,j,k} = \xi_{0,0,0} + \sum_{a=1}^{15} \left(\beta_{a,0,0} \times x_{i,j,k} \right)$$
$$+ \sum_{b=1}^{2} \left(\gamma_{0,b,0} \times x_{j,k} \right)$$
$$+ \left(w_{0,k} + u_{0,j,k} + r_{i,j,k} \right).$$

The subscript i denotes WOM conversation (the first-level portion of the model), j denotes brand (second level), and k denotes the product category of the brand (third level). The fixed portion of the model is captured by the fixed regression intercept, $\xi_{0,0,0}$, and the coefficients $\beta_{1,0,0}$ to $\beta_{15,0,0}$ (indexed by a) and $\gamma_{0,1,0}$ and $\gamma_{0,2,0}$ (indexed by b). The coefficients $\beta_{1,0,0}$ to $\beta_{15,0,0}$ represent the fifteen fixed regression parameters necessary to capture the full factorial of the WOM conversation variables (valence [4] × channel [2] × social tie [2]). The $x_{i,j,k}$ predictors are all dummy codes that represent different valence, channel, and social tie strength properties of a particular WOM conversation. Using neutral online WOM conversations between weak social ties as the reference group, $\beta_{1,0,0}$ to $\beta_{3,0,0}$ represent the main effects of valence (PWOM, NWOM, and mixed WOM, respectively), $\beta_{4,0,0}$ represents offline WOM (online WOM is the reference group), and $\beta_{5,0,0}$ represents strong social tie (weak tie is the reference). The two-way interactions are captured with $\beta_{6,0,0}$ to $\beta_{8,0,0}$ (WOM valence and channel), $\beta_{9,0,0}$ to $\beta_{11,0,0}$ (WOM valence and social tie), and $\beta_{12,0,0}$ (channel and social tie). The coefficients $\beta_{13,0,0}$ to $\beta_{15,0,0}$ represent the three-way interactions between valence, channel, and social tie strength. The fixed coefficients $\gamma_{0,1,0}$ and $\gamma_{0,2,0}$ capture the brand-level WOM volume control variable (main

effect and quadratic effect). We label the parameter estimates for easy reference in Table 2.

The residual components of the model are the random part of the mixed model and are captured by $r_{i,j,k}$, $u_{0,j,k}$, and $w_{0,k}$. The random deviation of the intercept for product category k from the overall regression model is represented by $w_{0,k}$. The random deviation of the intercept for brand j in product category k from the overall regression model is represented by $u_{0,j,k}$, and the error in the WOM receiver's predicted PURCHASE or TRANSMIT score from conversation i about brand j in product category k is represented by $r_{i,j,k}$. Given that our objective is to focus on the relationship between WOM conversation characteristics and purchase and retransmission intentions, this multilevel modeling approach is appropriate because it allows us to also account for both brand-level and product category–level clustering on the dependent variable. The models were fitted using maximum likelihood estimation. We report the parameter estimates in Table 2.

RESULTS

In Tables 3 and 4, we report the predicted means and standard errors for purchase intentions and WOM retransmission intentions across valence, channel of communication, and social tie strength. We first proceed by discussing the results in terms of the individual roles that valence, channel, and social tie strength play in influencing purchase intentions and WOM retransmission intentions. We then investigate and discuss the more nuanced interactions between the three WOM conversation properties, focusing on how differences in WOM channel and social tie strength influence the relationship between WOM valence and the dependent variables.

As expected, the valence of a WOM conversation plays a pivotal role in both purchase and WOM retransmission intentions. For both dependent variables, PWOM results in the highest predicted means (purchase intentions: M = 8.37, SE = .136; retransmission intentions: M = 8.05, SE = .062). However, the effect of negative WOM sentiment on the dependent variables differs between purchase and retransmission intentions. The predicted mean of purchase intentions for NWOM (M = 4.03, SE = .137) is 40.4% lower than that of purchase intentions for neutral WOM (M = 6.77, SE = .137; $\chi^2(1) = 31{,}692.19$, $p < .001$). The predicted mean of purchase intentions for mixed WOM (M = 6.45, SE = .137) is 4.7% lower than that for neutral WOM ($\chi^2(1) = 637.40$, $p < .001$).

In addition, with respect to predicted means for purchase intentions, NWOM had a larger absolute difference from neutral WOM when compared with the difference between PWOM and neutral WOM. The absolute difference between NWOM and neutral WOM (2.75) was significantly larger than difference between PWOM and neutral WOM (1.6; $\chi^2(1) = 2{,}431.86$, $p < .001$). On the other hand, for retransmission intentions, the difference between PWOM and neutral WOM (1.8) was larger than the difference between NWOM and neutral WOM (.72; $\chi^2(1) = 6{,}893.94$, $p < .001$), the reverse of the pattern of relationships observed for purchase intentions.

When we considered only the channel of the WOM communication, there were much smaller differences in the predicted means of purchase intentions and retransmission intentions between offline WOM and online WOM communications. The predicted mean of purchase intentions for

Table 2

RESULTS FOR PURCHASE AND RETRANSMISSION INTENTIONS

Variable	Notation	DV: Purchase Intentions	DV: Retransmission Intentions
Fixed Effects			
Intercept	$\xi_{0,0,0}$	6.206*** (.177)	6.309*** (.120)
Positive valence	$\beta_{1,0,0}$	1.855*** (.100)	1.514*** (.100)
Negative valence	$\beta_{2,0,0}$	−1.893*** (.134)	.200 (.134)
Mixed valence	$\beta_{3,0,0}$	.065 (.112)	.808*** (.113)
Offline channel	$\beta_{4,0,0}$	.044 (.092)	−.148 (.092)
Strong social tie	$\beta_{5,0,0}$	−.007 (.103)	.266** (.103)
Positive × Offline	$\beta_{6,0,0}$	−.574*** (.138)	.581*** (.138)
Negative × Offline	$\beta_{7,0,0}$	−.201* (.116)	−.088 (.116)
Mixed × Offline	$\beta_{8,0,0}$	.628*** (.103)	.222** (.103)
Positive × Strong	$\beta_{9,0,0}$	−.313*** (.115)	−.044 (.115)
Negative × Strong	$\beta_{10,0,0}$	−.191 (.152)	.211 (.152)
Mixed × Strong	$\beta_{11,0,0}$	−.060 (.129)	−.213 (.130)
Strong × Offline	$\beta_{12,0,0}$	.178* (.106)	−.061 (.106)
Positive × Offline × Strong	$\beta_{13,0,0}$	.005 (.118)	.088 (.118)
Negative × Offline × Strong	$\beta_{14,0,0}$	−.196 (.157)	−.254 (.157)
Mixed × Offline × Strong	$\beta_{15,0,0}$	−.194 (.133)	.285** (.134)
WOM volume	$\gamma_{0,1,0}$	.124*** (.041)	.028 (.031)
WOM volume × WOM volume	$\gamma_{0,2,0}$	−.031 (.019)	−.013 (.014)
Random Effects (σ)			
Level 3 (brand category)		.465*** (.091)	.172*** (.039)
Level 2 (brand)		.577*** (.017)	.430*** (.015)
Number of WOM conversations		186,775	186,775
Number of brands		804	804
Log-likelihood		−339,161.06	−339,393.61
Wald χ^2 (d.f. = 17)		144,973.80	36,891.01

*$p < .1$ (two-tailed).
**$p < .05$ (two-tailed).
***$p < .01$ (two-tailed).
Notes: DV = dependent variable. Standard errors are in parentheses.

offline WOM (M = 7.46, SE = .136) was only .1% higher than that for online WOM (M = 7.41, SE = .137; χ^2 (1) = 5.87, $p < .05$). Likewise, predicted mean of retransmission intentions was only .1% higher for offline WOM (M = 7.56, SE = .062) than online WOM (M = 7.49, SE = .064; χ^2(1) = 6.34, $p < .01$).

The overall predicted mean differences in purchase and retransmission intentions between strong tie and weak tie WOM were more pronounced than the differences observed between offline and online channels. When we considered only the social ties involved in the WOM conversation, the predicted mean of purchase intentions for strong tie WOM was 7.39% larger (M = 7.56, SE = .136) than for weak tie WOM (M = 7.04, SE = .136; χ^2(1) = 3,622.06, $p < .001$). The predicted mean of retransmission intentions for strong tie WOM (M = 7.59, SE = .062) was 2.6% greater than that for weak tie WOM (M = 7.40, SE = .062; χ^2(1) = 488.57, $p < .001$).

Summary

This analysis focuses on the relationships between each of the three WOM conversation variables and purchase and retransmission intentions. From this investigation, it is clear that the valence of the WOM conversation has the most substantial individual relationship with both purchase and retransmission intentions. The roles of PWOM and NWOM fell mostly in line with expectations; that is, PWOM is positively associated with both purchase and WOM retransmission intentions, and the effect of NWOM is larger than that of PWOM on purchase intentions. However, it also became clear that distinguishing between neutral and mixed WOM about a brand was informative for both purchase and retransmission intentions; purchase intentions for mixed WOM were 4.7% lower than those for neutral WOM, and retransmission intentions for mixed

Table 3

PREDICTED MARGINAL MEANS OF PURCHASE INTENTIONS ACROSS WOM TYPES

Channel	Social Tie Strength	Positive Valence	Negative Valence	Neutral Valence	Mixed Valence	Channel Only	Social Tie Strength Only
Offline	Strong	8.48 (.136)	4.08 (.137)	6.94 (.137)	6.55 (.137)	7.46 (.136)	7.56 (.136)
	Weak	7.97 (.137)	3.66 (.138)	6.13 (.138)	6.00 (.137)		7.04 (.136)
Online	Strong	8.25 (.138)	4.63 (.145)	6.71 (.146)	6.72 (.142)	7.41 (.137)	
	Weak	7.94 (.144)	4.19 (.169)	6.08 (.163)	6.15 (.153)		
Valence only		8.37 (.136)	4.03 (.137)	6.77 (.137)	6.45 (.136)		

Notes: Standard errors are in parentheses. Values are responses from WOM recipients about their purchase intentions, rated on an 11-point scale, where 0 = "not at all likely" and 10 = "extremely likely."

Table 4

PREDICTED MARGINAL MEANS OF RETRANSMISSION INTENTIONS ACROSS WOM TYPES

Channel	Social Tie Strength	Positive Valence	Negative Valence	Neutral Valence	Mixed Valence	Channel Only	Social Tie Strength Only
Offline	Strong	8.10 (.062)	7.01 (.063)	6.28 (.063)	7.06 (.063)	7.56 (.062)	7.59 (.62)
	Weak	7.89 (.063)	6.90 (.067)	6.12 (.066)	6.83 (.064)		7.40 (.62)
Online	Strong	7.96 (.066)	6.90 (.080)	6.49 (.080)	7.08 (.073)	7.50 (.64)	
	Weak	7.78 (.077)	6.46 (.118)	6.26 (.108)	7.07 (.093)		
Valence only		8.05 (.062)	6.98 (.063)	6.25 (.063)	7.03 (.062)		

Notes: Standard errors are in parentheses. Values are responses from WOM recipients about their retransmission intentions, rated on an 11-point scale, where 0 = "not at all likely" and 10 = "extremely likely."

WOM were 12.5% higher than for those for neutral WOM. In addition, these results suggest that the channel of the WOM conversation had little substantive direct influence on purchase or retransmission intentions. On the other hand, social tie strength had a slightly more substantive direct impact, with strong ties tending to positively relate to both purchase and retransmission intentions.

Although informative, this analysis ignores the potential interaction between valence, channel, and social tie strength. Considering their interactions is important; conceptually, the valence of the WOM conversation should act as a core driver of resulting consumer intentions, whereas the surrounding context (the channel and the people talking) of the conversation should shape how someone reacts to the sentiment in the conversation. In the following analyses, we proceed to investigate how the channel and the strength of the social tie in the WOM conversation interact with the relationship between WOM valence and dependent variables.

### Investigating the Interaction of WOM Valence, Channel, and Social Tie Strength

Figures 1 and 2 depict the predicted means of purchase intentions and WOM retransmission intentions when interactions between WOM valence, channel, and social tie strength are allowed for. The figures present the 16 possible combinations of valence, channel, and social tie strength in rank order of their predicted means of purchase intentions (Figure 1) and retransmission intentions (Figure 2). In both figures, white bars indicate PWOM, black bars indicate NWOM, gray bars indicate neutral WOM, and striped bars indicate mixed WOM. Before we proceed with formal statistical tests, these visualizations make it descriptively easier to approximate and intuit the relative impact of each WOM conversation characteristic on purchase or retransmission intentions. The tendency for the rank order of predicted means to display grouping by WOM valence (neutral and mixed WOM on purchase intentions being a notable exception) clearly shows that WOM valence is the primary influence on purchase and retransmission intentions, whereas the variation in rank order positions by social tie strength and channel within the WOM valence groups illustrates the interactions these WOM conversation properties have with WOM valence. For instance, PWOM between strong social ties (whether offline or online) has the highest predicted means for both intention outcomes, followed in rank by PWOM between weak social ties. For mixed and neutral WOM, the predicted mean purchase intentions tend to alternate in rank importance; it is the presence of strong tie instead of weak tie that determines the

relative importance rank for neutral and mixed WOM (e.g., strong tie conversations of neutral or mixed sentiment hold the 4th fourth through seventh positions, and neutral and mixed sentiment weak tie conversations hold the 8th through 11th positions). Finally, NWOM takes the four lowest-ranked positions for purchase intentions, and NWOM that occurs offline holds both of the lowest positions for purchase intentions. For retransmission intentions, neutral WOM holds four of the five lowest positions, and neutral WOM between weak social ties has the lowest overall predicted mean. Mixed WOM tends to have higher predicted retransmission intentions than NWOM, and the lowest retransmission intentions for NWOM and mixed WOM are both for conversations between weak ties.

The Moderating Role of WOM Channel

We investigated whether the channel of the WOM conversation moderates the relationship of valence with purchase intentions and retransmission intentions. We did this by using neutral WOM as a relative reference point and then comparing how the size of the difference in the predicted means for PWOM, NWOM, or mixed WOM and the neutral WOM reference varied between offline and online WOM. The difference in purchase intentions between NWOM and neutral WOM was strongly moderated by WOM channel ($\chi^2(2) = 123.85$, $p < .001$). Specifically, the difference in purchase intentions between NWOM and neutral WOM difference is expected to be 36.9% greater for offline conversations than online conversations between strong ties and 30.3% greater when the conversation is between weak ties. In contrast, the channel of WOM conversation did not significantly moderate the size of the difference in purchase intentions between PWOM and neutral WOM ($\chi^2(2) = .01$, $p > .90$). The relative difference in purchase intentions between mixed WOM and neutral WOM was also significantly greater in offline channels than online channels. Channel also significantly moderated the difference in purchase intentions between mixed WOM and neutral WOM ($\chi^2(2) = 19.92$, $p < .001$). Upon closer inspection, the difference in purchase intentions between mixed WOM and neutral WOM conversations was negative and statistically significant in offline channels (5.6% lower for strong tie WOM, 2.2% lower for weak tie WOM; $\chi^2(1) = 259.88$, $p < .001$), although there was no significant difference in purchase intentions between mixed WOM and neutral WOM conversations in online channels ($\chi^2(1) = .30$, $p > .50$). Together, these results suggest that offline channels accentuate the negative impact of negative brand

Figure 1
PREDICTED MEANS OF PURCHASE INTENTIONS BY WOM CONVERSATION VALENCE, CHANNEL, AND SOCIAL TIE STRENGTH,
RANKED BY MEAN
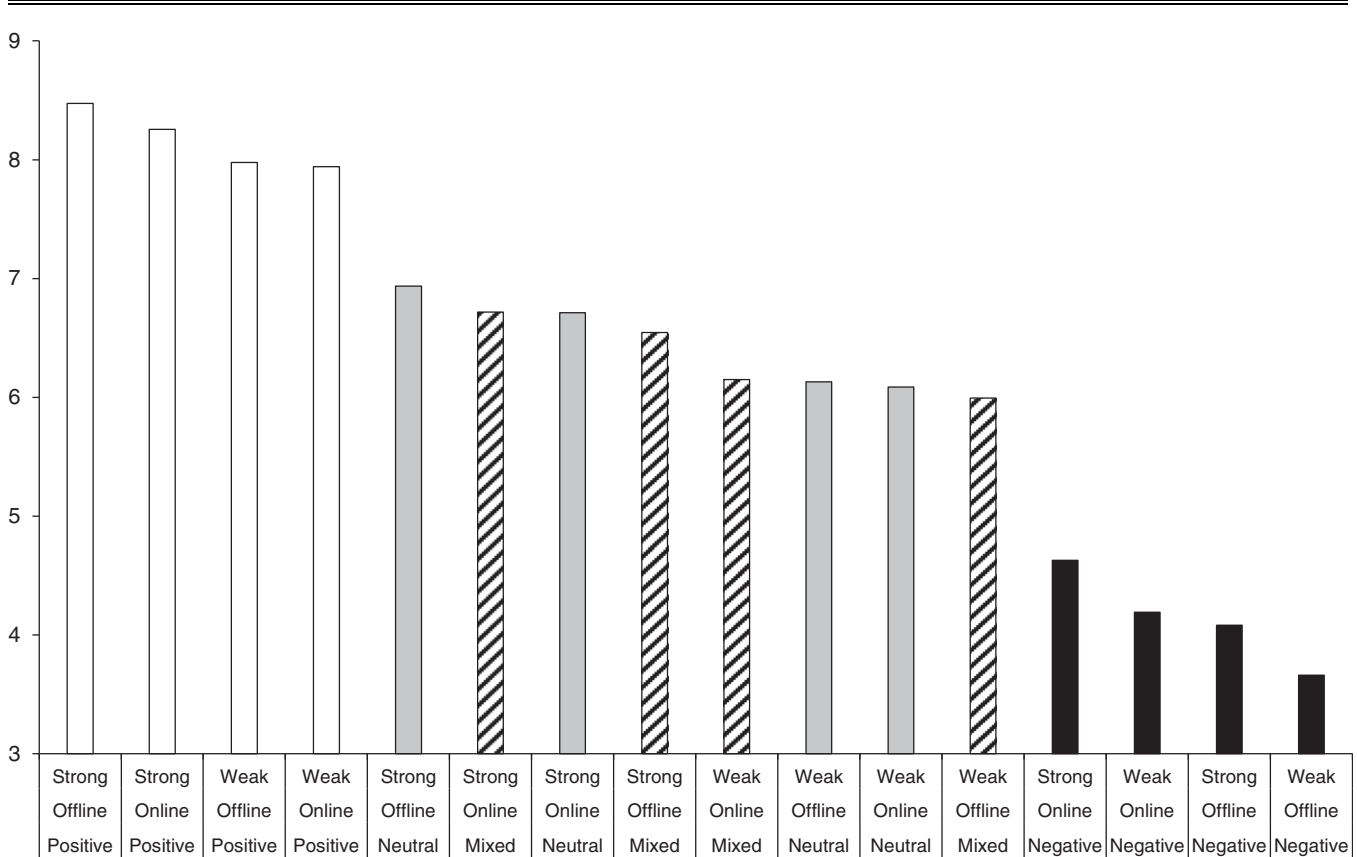
Notes: White bars indicate PWOM, black bars indicate NWOM, gray bars indicate neutral WOM, and striped bars indicate mixed WOM. Values are responses from WOM recipients about their purchase intentions, rated on an 11-point scale, where 0 = "not at all likely" and 10 = "extremely likely."

sentiment in WOM conversations (NWOM and the partial negative sentiment in mixed WOM) on purchase intentions.

The channel of the WOM conversation also positively moderated the size of the difference in retransmission intentions between neutral WOM and PWOM and NWOM. The size of the difference in retransmission intentions between PWOM and neutral WOM was significantly larger when the conversation occurred offline rather than online ($\chi^2(2) = 44.86$, $p < .001$); the expected difference was 32.7% larger when the PWOM conversation occurred offline between strong ties and 58.1% larger when it occurred offline between weak ties. The difference between NWOM and neutral WOM was also significantly larger when the conversation occurred offline instead of online ($\chi^2(2) = 36.77$, $p < .001$). This difference is expected to be 79.6% greater for offline than online conversations when it occurs among strong ties and 290.1% greater for offline than online conversations when it occurs between weak ties. However, the difference in retransmission intentions between mixed WOM and neutral WOM was not accentuated for offline WOM; the difference was positively accentuated in the case of strong tie WOM ($\chi^2(1) = 8.87$, $p < .01$), but there was no significant difference in the case of weak tie WOM ($\chi^2(1) = .57$, $p > .40$).

The results related to the interaction between WOM valence and channel support the idea that offline WOM communications are more strongly linked with behavioral intentions than online WOM. That is, offline WOM conversations appear to exacerbate WOM recipient response to the valence of WOM content. This interpretation has support in the case of NWOM for purchase intentions and both PWOM and NWOM for retransmission intentions. The propensity for a consumer to retransmit NWOM is particularly accentuated when it occurs offline.

The Moderating Role of Social Tie Strength

Again, we used neutral WOM as a relative reference point and then compared how the size of the difference in purchase and retransmission intentions between PWOM, NWOM, and mixed WOM and neutral WOM varied between strong and weak social ties. The difference in purchase intentions between PWOM and neutral WOM was unexpectedly greater between weak ties than between strong ties (19.5% greater for offline, 20.1% greater for online; $\chi^2(2) = 127.73$, $p < .001$). However, the unexpected direction of the moderating effect of social tie strength did not overtake the significant positive main effect of strong social ties on purchase intentions (as we reported in the

Figure 2
PREDICTED MEANS OF RETRANSMISSON INTENTIONS BY WOM CONVERSATION VALENCE, CHANNEL, AND SOCIAL TIE STRENGTH,
RANKED BY MEAN
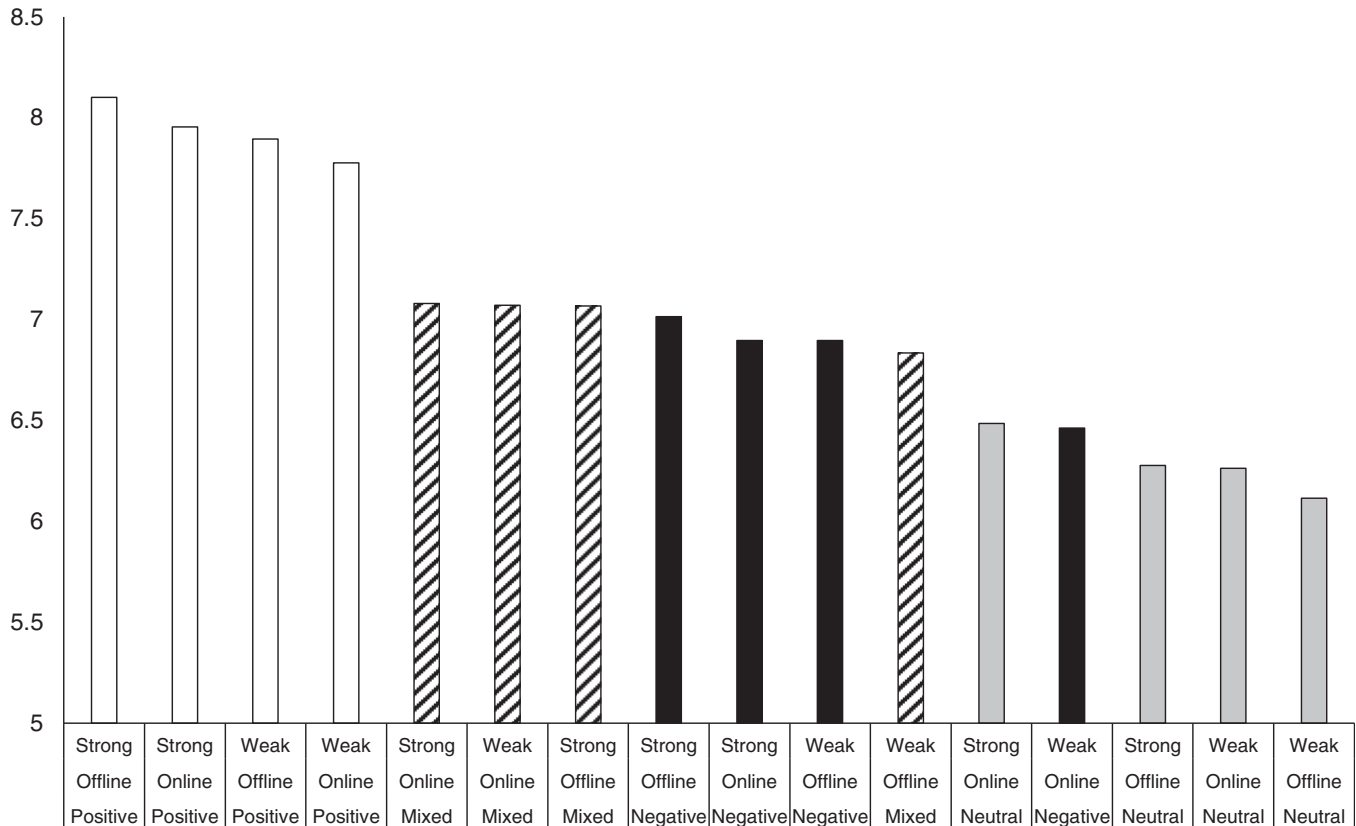
Notes: White bars indicate PWOM, black bars indicate NWOM, gray bars indicate neutral WOM, and striped bars indicate mixed WOM. Values are responses from WOM recipients about their retransmission intentions, rated on an 11-point scale, where 0 = "not at all likely" and 10 = "extremely likely."

initial analyses). This is why strong tie PWOM still has the absolute largest predicted mean of purchase intentions. The moderating effect, however, suggests that the expected difference in purchase intentions between PWOM and neutral WOM is not as large as would be expected solely according to the main effect of strong tie WOM.

In terms of the size of the negative difference in purchase intentions between NWOM and neutral WOM, strong social ties even further exacerbated the difference when compared with weak tie conversations (15.8% greater for offline, 10.5% greater for online; $\chi^2(2) = 103.07$, $p < .001$). As reported previously, the difference in purchase intentions between mixed WOM and neutral WOM was only significantly different in the case of offline WOM. The size of this negative difference between mixed WOM and neutral WOM was 188.1% greater for strong tie WOM conversations compared to weak tie WOM conversations ($\chi^2(1) = 60.84$, $p < .001$).

With respect to WOM retransmission intentions, there was only limited evidence for social tie strength moderating the size of the effects between PWOM, NWOM, and mixed WOM and the neutral WOM reference. Social tie strength did not moderate the size of the PWOM versus neutral WOM difference in retransmission intentions ($\chi^2(2) = 2.61$, $p > .2$); the same was true for the NWOM versus neutral

WOM difference ($\chi^2(2) = 3.14$, $p > .2$). The difference in the predicted means for retransmission intention between mixed WOM and neutral WOM was not significant in the case of online conversations ($\chi^2(1) = 2.70$, $p > .1$) but was significant in the case of offline conversations ($\chi^2(1) = 4.78$, $p < .05$); WOM between strong ties further accentuated the tendency for mixed WOM to have higher retransmission intentions than neutral WOM.

These results suggest that the strength of the social tie moderated the relationship between WOM valence and behavioral intentions primarily in the case of purchase intentions, not retransmission intentions. Strong tie WOM tended to exacerbate the negative influence of NWOM and mixed WOM on purchase intentions, whereas weak tie WOM had a more accentuated influence on the difference in purchase intentions between PWOM and neutral WOM. However, given the strong main effect strong ties have on purchase intentions, strong tie PWOM still reigns as having the highest overall purchase intentions.

Channel and Social Tie Strength Influencing the Strength of NWOM Effect

The initial analysis identified that with respect to purchase intentions, NWOM had a larger absolute difference

from neutral WOM than did PWOM. The degree of this absolute difference was most pronounced for WOM that occurred between strong ties in offline channels; there was a significantly larger relative size difference between NWOM and neutral WOM than between PWOM and neutral WOM between strong ties in offline channels ($|\Delta|$ for PWOM − neutral WOM = 1.54; $|\Delta|$ for NWOM − neutral WOM = $|-2.85|$, significantly larger and different from all other social tie and channel combinations; $p < .001$).

Preliminary Analysis: The Interplay Between WOM Characteristics and Brand Properties

Recent studies have investigated the relationship between brands and WOM creation and have called for more work in the area of brand and WOM relationships (Lovett, Peres, and Shachar 2013). The characteristics of the brand referenced in a WOM conversation act as an important piece of content that can influence behavioral intentions due to WOM, much as WOM valence did in our present study. Indeed, the statistically significant ($p < .001$) brand-level (Level 2) variation we observed in our mixed linear model ($\sigma = .577$ for purchase intentions, $\sigma = .172$ for retransmission intentions) suggests that there may be theoretically relevant brand-level heterogeneity that could be accounted for with brand-level predictors. We extend our study by incorporating into our model 19 brand-level predictors from multiple academic and professional sources (Lovett, Peres, and Shachar 2014). This additional investigation included 504 brands (retaining 62.6% of the original brands studied in the main analysis and 90.2% of the WOM conversations) and revealed several interesting insights. Appendix C provides a table with illustrative brand names for the continuous-variable brand traits used in this preliminary analysis.

Our results suggest that brand characteristics primarily moderated consumers' purchase intentions due to received NWOM, while they more heavily moderated retransmission intentions due to PWOM. We found that brands with strong social elements (e.g., highly differentiated, visible in the environment) and those that stimulate emotional arousal (e.g., excitement, high satisfaction) tend to be shielded somewhat from the adverse impact of NWOM on purchase intentions. This brand-level analysis shows potential for a more rigorous evaluation in future studies.

DISCUSSION

Our results provide insights into the behavioral intentions of people receiving WOM about a brand. Compared with neutral brand sentiment, positive, mixed, and negative sentiments increased intentions to retransmit the WOM message about a brand. Whereas PWOM had the greatest absolute effect for retransmission intentions, NWOM had the largest absolute effect for purchase intentions. We also find that distinguishing mixed WOM from neutral WOM is important for understanding WOM recipients' behavioral intentions: mixed WOM was associated with lower purchase intentions but greater intentions to retransmit the WOM conversations.

We also show that the valence of WOM has a stronger relationship with purchase intentions when it occurs offline, in particular by making NWOM and mixed WOM even more damaging to consumers' intentions to buy or try a brand. Even more surprising, the results also demonstrate that offline WOM conversations actually result in higher retransmission intentions than online WOM. The interaction between offline WOM and WOM valence is noteworthy and seems to contradict traditional thinking about online WOM; the typical presumption is that the relative ease of online WOM results in more frequent retransmission. Although the ease of sharing ideas online may indeed drive eWOM (such as by simply retweeting a Twitter post), our study of actual WOM conversations suggests that offline channels are somewhat more influential at stimulating the later sharing of conversations.

Another interesting finding is that the strength of the social tie in a WOM conversation appears to play a larger role in purchase intentions than it does in retransmission intentions. Strong tie WOM had a positive main effect on purchase intentions, and social tie strength also moderated the relative impacts of PWOM, NWOM, and mixed WOM on purchase intentions. In contrast, strong ties had only a modest positive main effect on retransmission intentions, and there was little evidence of social tie strength moderating the influence of WOM valence. Considered together, these results suggest that the source of WOM plays a more substantial role in influencing purchase decisions than it does in determining whether someone is willing to pass along a WOM conversation to others.

Research Implications

Our findings complement other recent research with respect to WOM channel effects. Specifically, Berger and Iyengar (2013) demonstrate that the asynchronicity of offline communication channels explains why people are more likely to talk about interesting brands online than offline. In contrast, we show that the additional richness of the offline channel could explain why people are more willing to retransmit interesting conversations (PWOM, NWOM, and mixed WOM about a brand) when they receive secondhand information from others—that is, because of the increased clarity and richness of the received WOM message in offline channels.

This study also contributes to the dialogue on the asymmetric effects of positive and negative information on consumer response. Although the results are consistent with other studies that demonstrate a general tendency for negative sentiment to have an asymmetrically greater effect on consumer purchase behavior, this study also suggests that investigating asymmetric purchase response to WOM does not fully explain consumer response to WOM activity. When we consider how a WOM episode from one consumer can subsequently influence other consumers' behavior through retransmission activities, it becomes even less clear whether NWOM or PWOM truly has a net asymmetric influence. The results of this study suggest that the positive association of PWOM on retransmission is much stronger than the negative association of NWOM; this notion receives further support from evidence showing that mixed WOM sentiment is more positively related to WOM retransmission than is NWOM. This finding is consistent with Berger and Milkman (2012); they identify which online news article content drove consumers to share (i.e., retransmit) an article with others. As in our study, Berger and Milkman (2012) find that the positive

valence of content is associated with retransmission and that the overall emotionality of a message (which includes negative and ambivalent content) is related to retransmission. They also show that psychologically arousing emotions drive retransmission.

Finally, our findings provide implications for marketing studies that investigate how aggregated quantities of WOM are linked to marketing outcomes, such as sales or market share. Researchers working in this area in the future would likely derive superior predictive models if they, at the least, distinguished aggregated WOM by valence (including separating mixed and neutral WOM) and channel and identified the participants in the conversation. Brands' WOM differs in terms of the relative proportion of WOM valence type, WOM medium type, and WOM social tie type; it thus follows to reason that the conversation-level differences identified in our study can ultimately affect aggregate-level brand outcomes.

Managerial Implications

Because WOM conversation properties tend to have different relationships with purchase and retransmission intentions, it would be wise for brand managers to carefully consider which types of WOM are most relevant depending on the immediate WOM objectives (i.e., driving more immediate purchase or influencing the spread of additional WOM conversations). While it is clear that PWOM is always most desirable, our results suggest that marketers might want to find ways to mitigate the occurrence of mixed WOM conversations if the goal is immediately influencing purchase. However, marketers might usefully encourage mixed WOM if the primary goal is to stimulate more WOM conversation retransmissions.

We suggest that our findings might also be useful to marketing managers concerned with designing WOM marketing campaigns: WOM marketing is commonly discussed and frequently practiced in the context of eWOM (sharing social media content, posting consumer-generated media content, etc.), and stimulating consumer engagement is recognized as an important metric of such campaigns. For example, one of the annual Word of Mouth Marketing Association's awards is the Engagement Award. Under the reasonable assumption that a WOM conversation will generally be a more engaging experience than passive consumption of eWOM, our results suggest it could be beneficial for marketers to carefully consider how to implement WOM marketing that is designed to translate online sharing into engaging offline conversations, because our findings suggest this is the platform where the influence on intentions to purchase and retransmit is most pronounced.

Limitations and Directions for Further Research

The database used in this study provides a rich, extensive sample of WOM conversations. However, the WOM measures have limitations. First, these measures of WOM activity are not a perfect representation of all WOM activity about brands. Because the database relies on respondent recollection, WOM conversations that occurred when the respondent had low motivation, ability, or opportunity to encode the conversation into memory are likely underrepresented. Another concern is that TalkTrack respondents might have simply disproportionately recalled favorable conversations about brands for which they already had a preference. If the goal of our study were to quantify the volume of WOM about a brand, there could be a risk of reverse causation. However, the goal of our study is to assess the purchase and retransmission intentions from WOM conversations; thus, so long as the recalled WOM conversations are reported accurately, our findings should be accurate even if the reported proportion of WOM types is suspect. However, there would be a simultaneity risk here if respondents first recollected their intentions of how to react to a WOM conversation and then inaccurately recollected the properties of the WOM conversation to better conform to their naive theory of what type of conversation would give rise to their purchase or retransmission intentions. Another limitation of our study is that our database lacked potentially informative variables about our WOM recipients. It could be informative to know whether WOM recipients were actively seeking out advice, their level of involvement in a brand's product category, and their personal preconversation evaluation of the brand. This unobserved heterogeneity is a limitation of our study, and future studies that investigate WOM conversation properties should account for additional person-specific variables.

We also stress that the scope of our investigation is limited to WOM *conversations* and thus does not include eWOM like structured online product reviews or consumer's reactions to reading consumer posts on message boards. A useful future study direction would be to investigate consumer differences in "eWOM" versus "eWOM conversations"; that is, how do consumers behave differently as a result of online WOM when the WOM does or does not include an interactive discourse component? In a review of 47 eWOM research articles, Cheung and Thadani (2012) observe that eWOM research has almost exclusively focused on studying online consumer reviews; future work is needed to connect and differentiate what we know about eWOM and eWOM conversations.

Another future avenue for research would be to establish the empirical link between WOM retransmission intentions and actual WOM retransmission behaviors (Manski 1990; Morrison 1979; Morwitz, Steckel, and Gupta 2007). The empirical link between purchase intentions and actual purchase behaviors has been examined rather extensively (Armstrong, Morwitz, and Kumar 2000; Morrison 1979; Morwitz, Steckel, and Gupta 2007), but we are not aware of research that has assessed the empirical relationship between retransmission intentions and actual retransmission behavior.

This investigation links a single WOM episode to consumer intentions; as such, this study does not investigate the effects of WOM "buildup." A limitation of this approach is that it does not directly account for whether a consumer might be motivated to act from a progressive buildup of a variety of WOM episodes over time. Consider WOM in the automotive category: any single WOM episode would likely be ineffective at motivating purchase. A study that explicitly incorporated measures of an individual consumer's existing brand knowledge

structures (e.g., mindset variables) would help address this limitation.

Finally, we see a need for additional research that investigates how the characteristics of brands shape how consumers react to WOM conversations. Previous work has linked aggregate brand properties to offline and online WOM quantities for brands (Lovett, Peres, and Shachar 2013), and our preliminary investigation reported in this study links aggregate brand properties to differences in consumer purchase and retransmission intentions. For brand managers, it would be valuable if research could provide as much instructive guidance as possible about which types of brands are advantaged or disadvantaged in exploiting different quadrants of the "WOM marketplace." Aggregate brand measures are likely appropriate for this managerially oriented research because brand managers will generally be unable to know each consumer's brand beliefs. However, from the perspective of building on marketing theory, consumer-level measures of brand perception are more appropriate because the goal will be to ascertain the causal role of brands on WOM recipient behavior.

Appendix A
OPERATIONALIZATION OF STUDY VARIABLES FROM THE TALKTRACK DATABASE

Variable Name	Conceptualization	Operationalization
Dependent Variables		
PURCHASE$_{i,j,k}$	The WOM recipient's degree of intention to purchase the brand as a consequence of the information received during the WOM conversation.	Respondent's answer to the question "On a scale of 0 to 10 where 0 is 'not at all likely' and 10 is 'extremely likely,' how likely is it that you will purchase the brand or buy something from that company, based on what you heard from other people in that conversation?"
RETRANSMIT$_{i,j,k}$	The WOM recipient's degree of intention to pass along brand information that was previously received by the WOM recipient during a WOM conversation.	Respondent's answer to the question "On a scale of 0 to 10 where 0 is 'not at all likely' and 10 is 'extremely likely,' how likely is it that you will pass along to others what you have learned from other people in the conversation, about that brand or company?"
Independent Variables: WOM Level		
VALENCE	The overall attractiveness or averseness of the information about a particular brand during a WOM conversation. Mixed valence is the presence of a mixture of both positive and negative brand information.	While the TalkTrack respondent was answering questions about the specific brand in the conversation, the following question was asked: "Overall did people have mostly good things to say about it, mostly bad things to say, or were the comments mixed or just neutral (neither positive nor negative)?"
		We created dummy codes to describe WOM about the brand that was mostly positive, mostly negative, or mixed (neutral WOM is the reference).
CHANNEL	The medium through which the WOM conversation took place.	While the TalkTrack respondent was answering questions regarding details about a specific WOM conversation, the following question was asked: "Was the conversation ... (options: face-to-face; on the phone; by e-mail; instant/text message; through an online chatroom, blog, Twitter, or social networking site)?"
		We created a dummy variable that indicated the conversation occurred offline if the respondent said it was "face-to-face" or "on the phone" and online for all other responses.
SOCIAL TIE	The overall importance of the relationship as identified by the social actors, the frequency of social interactions between the pair, and the social relationship designator assigned by the actors to the nature of the social relationship.	While the TalkTrack respondent was answering questions about a specific WOM conversation in which they received some advice about the specific brand, the following question was asked: "Now thinking about the conversations you discussed with somebody else, please answer the following questions about them. Relationship ... (options: spouse/partner, family member, best friend, personal friend, co-worker, other acquaintance, stranger)."
		We created a dummy code indicating the social tie was strong if the respondent identified the conversation partner as (1) "spouse/partner," (2) "family member," (3) "best friend," or (4) "personal friend." Thus, weak social ties is the reference value, indicated if the respondent identified the conversation partner as a (1) "co-worker," (2) "other acquaintance," or (3) "stranger."

Appendix B
DISTRIBUTION OF BRANDS AND WOM AND RATIO OF OFFLINE TO ONLINE WOM ACROSS CATEGORIES

Category	Original Investigation			Investigation Extension of Brand-Level Characteristics		
	Percentage of All Brands	Percentage of Total WOM	Ratio of Offline to Online WOM	Percentage of All Brands	Percentage of Total WOM	Ratio of Offline to Online WOM
Automotive	6.84%	12.46%	20.6 : 1	8.5%	13.3%	20.2 : 1
Beauty/personal care	7.48%	4.08%	14.7 : 1	9.1%	4.1%	14.0 : 1
Beverages	11.19%	15.08%	26.0 : 1	12.2%	16.0%	25.5 : 1
Children's products	3.36%	2.08%	21.3 : 1	3.3%	2.1%	19.4 : 1
Financial	8.46%	5.37%	24.2 : 1	7.1%	4.1%	22.8 : 1
Food/dining	21.02%	13.7%	27.2 : 1	18.7%	13.7%	26.4 : 1
Health care	3.98%	1.72%	32.1 : 1	2.7%	1.5%	32.5 : 1
Home	1.12%	.78%	28.8 : 1	1.2%	.8%	23.1 : 1
Household products	2.86%	1.82%	30.2 : 1	3.9%	1.9%	29.1 : 1
Media/entertainment	2.49%	1.63%	9.6 : 1	2.2%	1.1%	14.9 : 1
Retail/apparel	12.19%	14.47%	17.0 : 1	12.1%	14.9%	16.2 : 1
Technology	7.09%	12.05%	12.0 : 1	8.5%	12.9%	10.8 : 1
Telecom	4.98%	10.6%	15.3 : 1	4.1%	9.4%	14.6 : 1
Travel	6.59%	4.15%	12.5 : 1	6.1%	3.9%	13.2 : 1
All categories	804 brands	186,775 conversations	18.3 : 1	506 brands	168,645 conversations	17.8 : 1

Appendix C
REPRESENTATIVE BRANDS ACROSS DIFFERENT LEVELS OF BRAND TRAITS

Brand Characteristic	Low Scores (≤20th Percentile)	Central Scores (40th to 60th Percentile)	High Scores (≥80th Percentile)
Interestingness	Pine-Sol, Alamo	JetBlue, Saab	Mazda, Wendy's
Brand differentiation	Days Inn, Motrin	Powerade, Nissan	Bose, Netflix
Esteem	Virgin Mobile, Kia	Ragú, Dannon	Home Depot, Windex
Premium	IHOP, Suave	Kraft, Heinz	Jaguar, J.Crew
Relevance	Saab, Sam Adams	Zest, Starbucks	Kleenex, Target
Visibility	Prada, Ivory	Enterprise, Nestea	Pepsi, Levis
Excitement	Tylenol, Wachovia	Dr Pepper, Subway	Nikon, IKEA
Satisfaction	Delta, Alamo	Whirlpool, Panera	Chanel, Hoover
Brand age	YouTube, Red Bull	Brother, Dunkin' Donuts	Levi's, Coors
Complexity	Pledge, Hostess	Bose, Publix	AIG, Ferrari
Knowledge	Meijer, Guinness	H&R Block, Reebok	Lysol, LEGO
Perceived risk	Kleenex, Snickers	Hyatt, Garmin	Prilosec, Hollister
Involvement	Coca-Cola, Febreze	Luvs, Verizon	Allstate, Nissan
Advertising	Ajax, Hollister	Denny's, Corona	Sears, Tampax
Brand equity	Suzuki, AIG	Ross, Poland Spring	Whole Foods, Doritos
Brand usage	Porsche, E*TRADE	Costco, Bacardi	Heinz, Subway
WOM volume	Purex, Geico	Sierra Mist, Nordstrom	Apple, Nike

REFERENCES

Ajzen, Icek (1991), "The Theory of Planned Behavior," *Organizational Behavior and Human Decision Processes*, 50 (2), 179–211.

Alexandrov, Aliosha, Bryan Lilly, and Emin Babakus (2013), "The Effects of Social- and Self-Motives on the Intentions to Share Positive and Negative Word of Mouth," *Journal of the Academy of Marketing Science*, 41 (5), 531–46.

Armstrong, J. Scott, Vicki G. Morwitz, and V. Kumar (2000), "Sales Forecasts for Existing Consumer Products and Services: Do Purchase Intentions Contribute to Accuracy?" *International Journal of Forecasting*, 16 (3), 383–97.

Arndt, Johan (1967), "Word of Mouth Advertising and Informal Communication," in *Risk Taking and Information Handling in Consumer Behavior*, Donald F. Cox, ed. Boston: Harvard Business School.

Bansal, Harvir S. and Peter A. Voyer (2000), "Word-of-Mouth Processes Within a Services Purchase Decision Context," *Journal of Service Research*, 3 (2), 166–77.

Barnlund, Dean C. (1970), "A Transactional Model of Communication," in *Foundations of Communication Theory*, Kenneth K. Sereno and C. David Mortensen, eds. New York: Harper & Row.

Bemmaor, Albert C. (1995), "Predicting Behavior from Intention-to-Buy Measures: The Parametric Case," *Journal of Marketing Research*, 32 (May), 176–91.

Berger, Jonah and Raghuram Iyengar (2013), "Communication Channels and Word of Mouth: How the Medium Shapes the Message," *Journal of Consumer Research*, 40 (10), 567–79.

——— and Katherine L. Milkman (2012), "What Makes Online Content Viral?" *Journal of Marketing Research*, 49 (April), 192–205.

——— and Eric Schwartz (2011), "What Drives Immediate and Ongoing Word of Mouth?" *Journal of Marketing Research*, 48 (October), 869–80.

———, Alan T. Sorensen, and Scott J. Rasmussen (2010), "Positive Effects of Negative Publicity: When Negative Reviews Increase Sales," *Marketing Science*, 29 (5), 815–27.

Brown, Jacqueline Johnson and Peter H. Reingen (1987), "Social Ties and Word-of-Mouth Referral Behavior," *Journal of Consumer Research*, 14 (3), 350–62.

Burgoon, Judee K. and D. Nimmo (1980), "Nonverbal Communication Research in the 1970s: An Overview," *Communication Yearbook*, 4, 179–97.

Carl, Walter J. (2006), "What's All the Buzz About? Everyday Communication and the Relational Basis of Word-of-Mouth and Buzz Marketing Practices," *Management Communication Quarterly*, 19 (4), 601–34.

Chevalier, Judith A. and Dina Mayzlin (2006), "The Effect of Word of Mouth on Sales: Online Book Reviews," *Journal of Marketing Research*, 43 (August), 345–54.

Cheung, Christy M.K. and Dimple R. Thadani (2012), "The Impact of Electronic Word-of-Mouth Communication: A Literature Analysis and Integrative Model," *Decision Support Systems*, 54 (1), 461–70.

Cho, Charles H., Martin L. Martens, Hakkyun Kim, and Michelle Rodrigue (2011), "Astroturfing Global Warming: It Isn't Always Greener on the Other Side of the Fence," *Journal of Business Ethics*, 104 (4), 571–87.

Daft, Richard L. and Robert H. Lengel (1986), "Organizational Information Requirements, Media Richness, and Structural Design," *Management Science*, 32 (5), 554–71.

De Angelis, Matteo, Andrea Bonezzi, Alessandro M. Peluso, Derek D. Rucker, and Michele Costabile (2012), "On Braggarts and Gossips: A Self-Enhancement Account of Word-of-Mouth Generation and Transmission," *Journal of Marketing Research*, 49 (August), 551–63.

De Bruyn, Arnaud and Gary L. Lilien (2008), "A Multi-Stage Model of Word-of-Mouth Influence Through Viral Marketing," *International Journal of Research in Marketing*, 25 (3), 151–63.

De Matos, Celso Augusto and Alberto Vargas Rossi Carlos (2008), "Word-of-Mouth Communications in Marketing: A Meta-Analytic Review of the Antecedents and Moderators," *Journal of the Academy of Marketing Science*, 36 (4), 578–96.

Dempsey, Melanie A. and Andrew A. Mitchell (2010), "The Influence of Implicit Attitudes on Choice When Consumers Are Confronted with Conflicting Attribute Information," *Journal of Consumer Research*, 37 (4), 614–25.

Dennis, Alan R. and Susan T. Kinney (1999), "Testing Media Richness Theory in the New Media: The Effects of Cues, Feedback, and Task Equivocality," *Information Systems Research*, 9 (3), 256–74.

East, Robert, Kathy Hammond, and Wendy Lomax (2008), "Measuring the Impact of Positive and Negative Word of Mouth on Brand Purchase Probability," *International Journal of Research in Marketing*, 25 (3), 215–24.

Fay, Brad and Steve Thomson (2012), "WOM Is More Offline than Online," *AdMap* (October), 24–26.

Frenzen, Jonathan K. and Harry L. Davis (1990), "Purchasing Behavior in Embedded Markets," *Journal of Consumer Research*, 17 (1), 1–12.

——— and Kent Nakamoto (1993), "Structure, Cooperation, and the Flow of Market Information," *Journal of Consumer Research*, 20 (3), 360–75.

Granovetter, Mark S. (1983), "The Strength of Weak Ties: A Network Theory Revisited," *Sociological Theory*, 1 (1), 201–33.

Higie, Robin A., Lawrence F. Feick, and Linda L. Price (1987), "Types and Amount of Word-of-Mouth Communications About Retailers," *Journal of Retailing*, 63 (3), 260–78.

Keller, Ed and Brad Fay (2012), *The Face-to-Face Book: Why Real Relationships Rule in a Digital Marketplace*. New York: The Free Press.

King, Robert Allen, Pradeep Racherla, and Victoria D. Bush (2014), "What We Know and Don't Know About Online Word-of-Mouth: A Review and Synthesis of the Literature," *Journal of Interactive Marketing*, 28 (3), 167–83.

Libai, Barak, Eitan Muller, and Renana Peres (2013), "Decomposing the Value of Word-of-Mouth Seeding Programs: Acceleration Versus Expansion," *Journal of Marketing Research*, 50 (April), 161–76.

Lovett, Mitchell J., Renana Peres, and Ron Shachar (2013), "On Brands and Word of Mouth," *Journal of Marketing Research*, 50 (August), 427–44.

———, ———, and ——— (2014), "A Data Set of Brands and Their Characteristics," *Marketing Science*, 33 (4), 609–17.

Manski, Charles F. (1990), "The Use of Intentions Data to Predict Behavior: A Best-Case Analysis," *Journal of the American Statistical Association*, 85 (412), 934–40.

McPherson, Miller, Lynn Smith-Lovin, and James M. Cook (2001), "Birds of a Feather: Homophily in Social Networks," *Annual Review of Sociology*, 27, 415–44.

Morrison, Donald G. (1979), "Purchase Intentions and Purchase Behavior," *Journal of Marketing*, 43 (April), 65–74.

Morwitz, Vicki G., Joel H. Steckel, and Alok Gupta (2007), "When Do Purchase Intentions Predict Sales?" *International Journal of Forecasting*, 23 (3), 347–64.

Ryu, Gangseog and Lawrence Feick (2007), "A Penny for Your Thoughts: Referral Reward Programs and Referral Likelihood," *Journal of Marketing*, 71 (January), 84–94.

Shannon, Claude Elwood (1948), "A Mathematical Theory of Communication," *Bell System Technical Journal*, 27 (1), 379–423 and 623–25.

Singh, Jagdip (1990), "Voice, Exit, and Negative Word-of-Mouth Behaviors: An Investigation Across Three Service Categories," *Journal of the Academy of Marketing Science*, 18 (1), 1–15.

Trusov, Michael, Anand V. Bodapati, and Randolph E. Bucklin (2010), "Determining Influential Users in Internet Social Networks," *Journal of Marketing Research*, 47 (August), 643–58.

Tversky, Amos and Daniel Kahneman (1991), "Loss Aversion in Riskless Choice: A Reference-Dependent Model," *Quarterly Journal of Economics*, 106 (4), 1039–61.

Weimann, Gabriel (1983), "The Strength of Weak Conversational Ties in the Flow of Information and Influence," *Social Networks*, 5 (September), 245–67.