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Does the number of people with whom someone communicates influence what he or she discusses and shares? Six studies demonstrate that compared with narrowcasting (i.e., communicating with just one person), broadcasting (i.e., communicating with multiple people) leads consumers to avoid sharing content that makes them look bad. Narrowcasting, however, encourages people to share content that is useful to the message recipient. These effects are driven by communicators' focus of attention. People naturally tend to focus on the self, but communicating with just one person heightens other-focus, which leads communicators to share less self-presenting content and more useful content. These findings shed light on the drivers of word of mouth and provide insight into when the communication sender (vs. receiver) plays a relatively larger role in what people share.

*Keywords*: word of mouth, self-presentation, self-focus, other-focus, audience size

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# Broadcasting and Narrowcasting: How Audience Size Affects What People Share

Consumers communicate with others dozens of times a day. They talk to friends, chat with neighbors, and gossip with coworkers. These social exchanges have an important impact on consumer behavior, and word of mouth affects everything from the products people buy to the websites they visit (e.g., Chevalier and Mayzlin 2006; Trusov, Bucklin, and Pauwels 2009).

Communication requires more than one party; indeed, people cannot share things without an audience (real or implied). A fundamental aspect of an audience is its size. Sometimes communication involves talking to only one person, or "narrowcasting." In other instances, it involves talking to two or more people, or "broadcasting." At a party, for example, a person may talk to just one companion or to a group of friends. Similarly, people may respond to an e-mail involving just one coworker, or they may "reply all" to multiple colleagues at once. Might these differences in audience size affect what people talk about? And if so, how?

This research investigates how audience size influences what people share. We suggest that, relative to narrowcasting, broadcasting leads people to avoid sharing content that makes them look bad. Narrowcasting, in contrast, encourages people to share content that is useful to the recipient. We show that these effects are driven by the focus of the communicator's attention. Whereas people naturally tend to focus on the self, communicating with just one person heightens other-focus, which in turn influences what people transmit.

This article makes two primary contributions. First, although communication always involves an audience (either real or imagined), no research has examined how audience size affects what people share. Whereas models of communication (e.g., McGuire 1985) have often focused on whether messages will change recipients' attitudes, we focus on message transmission, analyzing the sender's decision regarding what message to share in the first place and considering how the mere *number* of recipients might play a role. Given consumers' newfound ability to communicate with many people at once through social media, understand-

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ing how audience size affects communication has become increasingly important.

Second, we contribute to a larger discussion in the wordof-mouth literature about when the sender or the receiver exerts more influence on what people share (Berger 2013; Dichter 1966). Although communication involves multiple parties, little is known about when and why the content people pass on is driven more by the speaker versus the recipient of the communication. We address both these points, illustrating how audience size shapes both what people talk about and whether sharing is driven relatively more by the communication sender or receiver.

## WORD OF MOUTH

Most word-of-mouth research has focused on its consequences or how it influences choice, diffusion, and sales. Word of mouth can generate awareness, encourage belief updating, or produce normative pressures (Van den Bulte and Wuyts 2009). Researchers have studied the impact of word of mouth in a variety of domains, from book sales to the adoption of new pharmaceutical drugs (Chevalier and Mayzlin 2006; Iyengar, Van den Bulte, and Valente 2011).

Scholars have paid less attention, however, to the question of how the audience influences what people talk about and share. Research on audience effects has mainly considered how tie strength affects communication (Brown and Reingen 1987; Frenzen and Nakamoto 1993). Strong ties are close others, such as family members and good friends, whereas weak ties are more distant others, such as acquaintances (Granovetter 1973). Research has found that people share with anyone when the value of information is low but are more hesitant to transmit valuable information to weak ties (Frenzen and Nakamoto 1993). Similarly, in referral networks, strong ties are perceived as more influential and are more likely to be used as information sources (Brown and Reingen 1987).

However, such research has only considered how audience type (i.e., tie strength) affects communication. In this article, we question how mere audience *size* might influence what people share.

#### THE CURRENT RESEARCH

We suggest that audience size affects the type of content people share by altering where communicators focus their attention, or the degree to which the sharer focuses on herself versus the communication recipient(s) when deciding what to share. We explore this theory in the following subsections.

### Audience Size and Sharer Focus

Attentional resources can be directed inward (toward the self) or outward (toward others) (Carver and Scheier 1978; Mor and Winquist 2002). Indeed, there is a direct trade-off between the two such that increasing one naturally decreases the other (e.g., Gilovich, Medvec, and Savitsky 2000; Trommsdorff and John 1992). When people are more self-focused, they are less likely to consider others' interests or concerns (Chiou and Lee 2013) and more likely to assume that others share their perspective (Fenigstein and Abrams 1993).

People have a strong default tendency to focus on the self. Decades of research on egocentrism have shown that people disproportionately attend to their own opinions and interests (Chambers and Windschitl 2004). Whether comparing abilities (Kruger 1999) or predicting others' preferences (LeRouge and Warlop 2006), people naturally tend to focus on themselves and insufficiently account for others' attitudes and values. Moreover, people have difficulty taking others' perspectives (Dunning, Van Boven, and Loewenstein 2001) and tend to focus on the self in part because selfrelevant information is more accessible (Ross and Sicoly 1979).

This natural propensity toward egocentrism can also be observed in what people share. Much of our daily communication is fixated on the self. Self-disclosure is the most common conversation topic (Emler 1990), and more than 60% of daily speech consists of one's personal experiences and relationships (Dunbar, Marriott, and Duncan 1997; Landis and Burtt 1924). This percentage is even higher in social media, in which 80% of users focus on the self (Naaman, Boase, and Lai 2010). Neuroscientific evidence has suggested that self-disclosure is intrinsically rewarding, activating regions of the brain associated with primary reinforcers (e.g., food, attractive people; Tamir and Mitchell 2012).

We suggest that broadcasting should do little to move people from this natural tendency for self-focus. Considering others is a deliberate process that requires time, effort, and motivation (Apperly et al. 2006; Epley et al. 2004). People do not consider others' beliefs and knowledge unless something in their environment triggers them to do so (Zhang and Epley 2012). There is little reason to believe that broadcasting would encourage such effort. Indeed, given that there are multiple others to consider, broadcasting may even increase the effort necessary to take others' perspectives.

Narrowcasting, in contrast, should encourage otherfocus. Having people think about a specific other mitigates egocentrism because it makes others more concrete (Alicke and Govorun 2005). Seeing a single person's name, for example, promotes individuation, or recognition of that person's distinct identity, which reduces egocentric biases such as the above-average effect (Alicke et al. 1995). Similarly, charity appeals featuring singular targets lead people to help others more because they make the victim more vivid (Jenni and Loewenstein 1997). Along these lines, sharing with just one other person should make the audience more concrete and vivid, which should increase the attention the other person receives (Taylor and Thompson 1982).

#### Audience Size and What People Share

By shifting sharer focus, we suggest that audience size influences two fundamental drivers of word of mouth: self-presentation and helping others (Dichter 1966; Engel, Blackwell, and Kegerreis 1969; Hennig-Thurau et. al. 2004). We discuss each of these drivers in turn.

*Self-presentation*. People often share things to present themselves in a positive (vs. negative) light (Berger 2013). Social interactions can be viewed as a performance in which people promote favorable impressions of themselves and avoid unfavorable ones (Goffman 1959). Indeed, the tendency to self-enhance, or bolster the self-concept, is one of the most central human motivations (Fiske 2001).

Self-presentation is also one of the most studied drivers of word of mouth (De Angelis et al. 2012; Engel, Blackwell, and Kegerreis 1969; Hennig-Thurau, et. al. 2004; Packard

#### Broadcasting and Narrowcasting

and Wooten 2013; Wojnicki and Godes 2011). Negative content is less viral than positive content (Berger and Milkman 2012) potentially because it reflects negatively on the sender (i.e., people do not want to be known for sharing depressing stories). Furthermore, people may be more likely to talk about novel, unique, or surprising products (Berger and Milkman 2012; Moldovan, Goldenberg, and Chattopadhyay 2011) because doing so reflects well on the person sharing the information, making him or her seem more interesting and "in the know" (Berger and Schwartz 2011).

We suggest that, compared with narrowcasting, broadcasting should lead people to share more self-presentational content because it does little to shift them away from their default self-focus. People automatically associate themselves more with favorable attributes than with unfavorable ones (Paulhus, Graf, and Van Selst 1989; Paulhus and Levitt 1987). We predict that broadcasting will not discourage this natural tendency to view and present the self in a nonnegative light. However, because narrowcasting shifts people's focus away from the self and toward others, we predict that it will reduce the sharing of self-presentational content.

Note that there are two types of self-presentation: protective and acquisitive (Arkin 1981). Protective self-presentation involves distancing oneself from things that make one look bad, such as negative personal outcomes or experiences (Richins 1984; Sedikides 1993; Sedikides and Strube 1995). For example, people wear fewer school colors after their team loses (Cialdini et al. 1976), and they may avoid sharing negative things that happen to them because it would make them seem depressing. Acquisitive self-presentation occurs when people seek social approval by connecting themselves to positive personal outcomes (Brown, Collins, and Schmidt 1988). Experts, for example, or people whose need to self-enhance is increased, tend to say positive things about a chosen experience (e.g., "Everyone liked the restaurant I picked") to appear smart and demonstrate expertise (De Angelis et al. 2012; Wojnicki and Godes 2011).

Although both types of self-presentation can occur, prior work has suggested that people are more motivated to avoid making bad impressions than to pursue good ones (Baumeister et al. 2001). Likewise, people are more likely to underestimate bad traits than overestimate good ones (Hoorens 1996; Klein 1992), and direct comparisons of protective and acquisitive self-presentation indicate that protective self-presentation is more likely (Tice 1991). In the communication domain, people tend to avoid posting negative information about themselves on social networks (Gonzales and Hancock 2011).

Given prior findings, we expect audience size to have stronger effects on protective self-presentation (i.e., avoiding negative impressions) than acquisitive self-presentation (i.e., approaching positive impressions). Specifically, we predict that broadcasting will reduce the sharing of content that makes the sharer look bad and will have a smaller influence on content that makes the sharer look good.

*Helping others*. Another major reason people share is to help others. Interview data suggest that more than 20% of word-of-mouth conversations are motivated by "altruistic" desires to guide people toward good consumption experiences (Sundaram, Mitra, and Webster 1998). Similarly, people often tune messages to their audience, tailoring what they say to suit the audience's knowledge or attitudes (Clark and Schaefer 1989; Schau and Gilly 2003). For example, people will be more likely to mention golf tips when talking to a golfer than to a theater buff.

One way people help others is by sharing useful information (e.g., discounted products, good restaurants; Dichter 1966; Hennig-Thurau et al. 2004). People are more likely to share marketing messages that have more utilitarian value (Chiu et al. 2007), and more useful news articles are more likely to go viral (Berger and Milkman 2012).

We suggest that narrowcasting will encourage people to share useful information by boosting other-focus. Increased other-focus should lead sharers to view others more as having their own minds with unique mental states, thoughts, and knowledge (Pylyshyn 1978; Wellman 1988). Just as a child is born self-focused and must develop the ability to understand that others have different beliefs and desires (Piaget 1926), narrowcasting should discourage people's natural egocentrism and encourage consideration of the audience's point of view. This other-focus, in turn, should facilitate the process of "audience tuning" (Higgins 1999) and lead people to share things that are more useful or relevant to their audience.

#### Overview

In summary, we suggest that mere audience size affects whether people share two types of content. Compared with narrowcasting, broadcasting should lead people to share more self-presentational content (i.e., avoid sharing content that makes them look bad) because talking to a group does not shift people from their natural self-focus. Narrowcasting, however, should increase other-focus and thus encourage people to share more useful content.

Six experiments test these predictions, demonstrating (1) how audience size influences what people share and (2) the underlying role of sharer focus. Study 1 investigates how audience size affects self-presentation and the types of events that people share. Study 2 examines how audience size affects face-to-face conversations while providing an initial test of the underlying process (i.e., sharer focus). Study 3 builds on this process and shows the effect of audience size on sharing useful content across audiences of different closeness. Study 4 tests the mechanism more directly by manipulating sharer focus and examining the effect on useful content (Study 4a) and self-presentational content (Study 4b). Finally, Study 5 further tests the process and demonstrates its robustness in a new domain.

Importantly, although self-presentational and useful content may overlap in certain situations, they are conceptually and practically distinct. Certain statements that make a person look bad (e.g., "I picked a terrible restaurant for dinner") may provide the receiver with useful information (i.e., "Avoid that restaurant"), but others (e.g., "I forgot my keys today") do not. Across our studies, ratings of how sharing content would make a person look (self-presentation) are not significantly correlated with how useful sharing that content would be to others. As a result, we separately examine how audience size affects the sharing of one type of content versus another, although our final study manipulates self-presentation and usefulness simultaneously to demonstrate how these constructs operate together.

### STUDY 1: TALKING ABOUT ONE'S DAY AND SELF-PRESENTATION

Study 1 manipulates audience size and examines how it affects what people share. We gave participants a list of events that supposedly happened to them on an imaginary day, which cast the self in either a positive or negative light. Then, we asked them to write a short description of that day to share with either one person (narrowcasting) or a group of people (broadcasting).

We predicted that compared with narrowcasting, broadcasting would lead people to share more self-presentational content. We test how audience size influences the number of events people share that make the self look good (acquisitive self-presentation) and bad (protective self-presentation) as well as whether they reframe negative events to make the self appear less negative.

#### Methods

One hundred ninety-two participants (64.6% female, mean age = 21 years) described the same imaginary day in an e-mail. The day included five events that made the self look good (e.g., "Your friend complimented you on your new shirt, which is one of your favorite brands") and five that made the self look bad (e.g., "You overslept and realized you missed your favorite morning show").<sup>1</sup> All events involved product or consumption experiences such that talking about them could generate word of mouth for products or brands. Participants selected which events to discuss and were encouraged to add details and elaborate. For the full list of events and examples of what participants wrote, see Web Appendix A.

The only difference between conditions was the size of the audience with which participants communicated. In the narrowcasting (broadcasting) condition, participants were asked to think about one friend (a group of friends) they often talk to and to imagine that they were talking to that friend (those friends). A manipulation check confirmed that people in the narrowcasting condition imagined writing to fewer others (M = 1.0) than in the broadcasting condition (M = 5.1; t(190) = -8.14, p < .001). Our key dependent variables were the number of events participants mentioned that made the self look bad and the number of events participants mentioned that made the self look good.

We also tested whether participants reframed negative events to make them seem less negative. For example, someone might say that it is fine that he slept through his alarm and missed his favorite show because he needed to catch up on sleep or because he knew the show would be replayed later. Two independent coders were given a short description of reframing and then rated each participant's passage on the basis of how much the sharer reframed negative things to make the self look less bad (1 = "not at all," and 5 = "a great deal"). Coders' ratings were highly correlated (r = .81) and averaged to form a reframing score.

#### Results

As we predicted, compared with narrowcasting (M = 2.34), broadcasting led participants to mention fewer events that would make the self look bad (M = 1.95; t(190) = -2.63, p < .01). Broadcasting also led participants to engage in more reframing to make the self look less negative (M<sub>broad</sub> = 3.13 vs. M<sub>narrow</sub> = 2.79; t(190) = -2.54, p = .01). There was no effect on the number of events that made the self look good (M<sub>broad</sub> = 2.31 vs. M<sub>narrow</sub> = 2.21; t < .8, p > .4).<sup>2</sup>

### Discussion

Study 1 provides preliminary support for our prediction that audience size influences what people share. Compared with narrowcasting, broadcasting increased self-presentation, decreasing the number of negative events participants mentioned and leading them to reframe such events to make the self look less bad.

The lack of an effect on positive events is consistent with the self-presentation literature and our prediction that protective self-presentation is stronger than acquisitive (Baumeister et al. 2001). Across our studies, we search for evidence of both types of self-presentation (particularly in Study 4) and discuss the overall pattern in the "General Discussion" section.

# STUDY 2: REAL CONVERSATION AND TEXTUAL ANALYSIS

Study 2 has five goals. First, we examine whether the effect of audience size on self-presentation persists in real interactions in which people communicate with one or multiple conversation partners.

Second, we control for audience closeness. The results of Study 1 are supportive, but one could argue that the narrowcasters might have imagined closer others, which made them more comfortable sharing events that make them look bad. To rule out this possibility, we designed Study 2 so that all participants interacted with complete strangers. This enables us to test whether our effects persist even in a situation in which audience closeness is held constant. We also measure temporary feelings of closeness and show that they do not drive the effects.

Third, we provide an initial test of the process, investigating whether audience size affects sharer focus. We ask participants to report the extent to which they are thinking about themselves versus others and examine whether it mediates the effects of audience size on what people share.

Fourth, we include two control conditions to test our theory that self-focus and self-presentation tendencies are the default. If we are correct that broadcasting does little to move people from their natural tendency to focus on the self, the broadcasting condition should be no different from the control conditions. Narrowcasting, however, should encourage people to think more about others and reduce self-presentation.

Fifth, we use a more open-ended method to test our theory. We ask participants to talk freely about a restaurant experience and use textual analysis (Linguistic Inquiry and Word Count [LIWC]; Pennebaker, Francis, and Booth 2001) to measure the positivity and negativity of what they wrote. Language content has been used to evaluate impor-

<sup>&</sup>lt;sup>1</sup>Pretest participants (N = 52) rated each event on how sharing it would make the sharer look. One-sample t-tests confirmed that the selected events made the self look good and bad, respectively (significantly above or below the self-presentation scale midpoint:  $M_{look \text{ good}} = 5.33$ , t(51) = 15.52, p < .001;  $M_{look \text{ bad}} = 2.58$ , t(51) = 18.16, p < .001).

<sup>&</sup>lt;sup>2</sup>Conditions did not differ in the number of words written ( $M_{broad} = 137$  vs.  $M_{narrow} = 132$ ; t(190) < .8, p > .3).

tant word-of-mouth outcomes (De Angelis et al. 2012; Moore 2012), and LIWC has been used across psychology and marketing to measure psychological constructs from passages of text (Berger and Milkman 2012; Tausczik and Pennebaker 2010). Negative emotional expression makes the self look bad (e.g., decreases liking; Bell 1978; Locke and Horowitz 1990). Consequently, we predict that compared with narrowcasting, broadcasting should reduce negative emotional expression. For completeness and consistency, we also tested whether audience size affects the amount of positive emotional expression.

### Methods

One hundred seventy students (74.7% female, mean age = 20 years) had a brief conversation with one or multiple students about a recent restaurant experience. They were randomly assigned to one of four conditions.

In the narrowcasting (broadcasting) condition, participants were assigned to speak to a single partner (small group of four to five people). Each pair or group was introduced and asked to have a conversation. To facilitate interaction and data analysis, participants first wrote down what they wanted to share, which enabled us to analyze the data at the individual level and avoid the interdependence of group conversation driving the results (Bales 1951). Then, participants read aloud what they had written to their partner or group.

There were also two control conditions. The first was a "no audience" control, in which people wrote about a recent restaurant experience but were not instructed to share it with others. This enabled us to hold the task and content constant (talking about a restaurant experience) and to analyze sharer focus and self-presentation when no audience of any size is involved. To ensure that writing alone did not shift sharer focus, we also included a "no task" control, in which participants did not write or share any content and just went straight to the dependent measures.

After completing the task, participants were asked, "How much are you thinking about yourself right now?" and "How much are you thinking about others right now?" (order counterbalanced, 1 = "not at all," and 7 = "a lot," differenced to form a measure of sharer focus).

Finally, we collected ancillary measures to test potential alternative explanations. To test whether narrowcasting induces a momentary feeling of closeness, we asked participants, "To what extent do you feel close to [your partner/ your group]?" (1 = "not at all close," and 7 = "extremely close"). One could argue that effects of audience size could be driven by increased anxiety, arousal, or embarrassment when talking to greater numbers of people. To test these possibilities, we asked participants to report how much they were feeling anxious (i.e., anxious, apprehensive, worried, and nervous;  $\alpha = .94$ ; Brooks and Schweitzer 2011), aroused (i.e., passive vs. active, mellow vs. fired up, and low energy vs. high energy;  $\alpha = .84$ ; Berger 2011), and embarrassed ("How embarrassed do you feel?" Kelly and Jones 1997) on seven-point scales.

#### Results

*Self-presentation*. For all writing conditions, we used LIWC to measure the percentage of each participant's passage that involved negative emotion words (e.g., "hate," "nasty," "annoyed") and positive emotion words (e.g.,





"love," "nice," "sweet"). As we predicted, audience size influenced self-presentation (F(2, 109) = 12.64, p < .001; see Figure 1). Relative to narrowcasting (M = 1.44), broadcasting led participants to use less negativity in their speech (M = .52; t(76) = -4.39, p < .001). As we expected, there was no difference between the broadcasting and "no audience" control condition (M = .49; t(75) = .15, p = .88). There were also no effects of audience size on the usage of positive emotion words (F(2, 109) = .77, p = .47).<sup>3</sup>

Sharer focus. As we predicted, condition also influenced sharer focus (F(3, 166) = 6.25, p < .001; see Figure 2). Compared with broadcasting (M = .44), narrowcasting shifted focus from the self toward others (M = -1.50; t(76) = -3.31, p = .001). There was no difference between broadcasting and either control condition (M<sub>no audience</sub> = .11; t < .6, p > .5; M<sub>no task</sub> = .78; t < .7, p > .5).<sup>4</sup>

*Mediation analysis*. The bootstrap mediation method (PROCESS macro; Hayes, Preacher, and Myers 2011) illus-

Figure 2 NARROWCASTING SHIFTS FOCUS AWAY FROM THE SELF AND TOWARD OTHERS (STUDY 2)



<sup>&</sup>lt;sup>3</sup>Conditions did not differ in the number of words written ( $M_{broad} = 153$ ,  $M_{narrow} = 165$ ,  $M_{control} = 142$ ; F(2, 109) < 1.4, p > .2).

<sup>&</sup>lt;sup>4</sup>This effect holds when we analyze ratings of self-focus and other-focus separately (self-focus: F(3, 166) = 7.64, p < .001; other-focus: F(3, 166) = 3.06, p = .030).

trates that differences in sharer focus drove the impact of condition on sharing self-presentational content (total indirect effect = -.15, SE = .09, 95% confidence interval [CI] does not include 0 [-.38, -.01]). Relative to narrowcasting, broadcasting led people to think more about themselves ( $a_1 = 1.94$ ), which decreased their willingness to share content that would portray them negatively ( $b_1 = -.07$ ).

Alternative explanations. Ancillary analyses cast doubt on several alternative explanations. There was no effect of audience size condition on feelings of closeness (F < .9, p >.3), anxiety (F < .5, p > .6), arousal (F < 1.3, p > .3), or embarrassment (F < .2, p > .9).

## Discussion

The results of Study 2 further support our conceptualization. First, audience size influenced what people shared. Compared with narrowcasting, broadcasting led participants to avoid negative emotional expression that would make them look bad. Consistent with Study 1 and with prior findings that protective self-presentation is more frequent than acquisitive (Baumeister et al. 2001; Tice 1991), there was no effect of audience size on positive emotional expression.

Second, the results provide preliminary support for our hypothesized mechanism. Audience size influences where communicators focus their attention, which in turn affects the content they share. Compared with broadcasting, narrowcasting shifts focus toward others and, as a result, decreases self-presentation.

Ancillary measures underscore these differences in sharer focus. Personal pronoun usage (e.g., "I," "you") provides information about the speaker's focus, attention, and priorities (Tausczik and Pennebaker 2010). People use first-person singular pronouns (e.g., "I," "my," "mine") when they are focused on themselves (e.g., when sitting in front of a mirror; Davis and Brock 1975), whereas they use second-person pronouns (e.g., "you," "your") when focused on others (e.g., when high self-monitors engage in peer interactions; Ickes, Reidhead, and Patterson 1986). Consistent with our theorizing, broadcasting led people to use more self-focused pronouns ( $M_{broad} = 8.79$ ,  $M_{narrow} = 7.59$ ; p = .03), whereas narrowcasting increased the use of other-focused pronouns  $(M_{narrow} = 1.69, M_{broad} = .81; p = .005)$ . Again, there were no differences between broadcasting and the "no audience" control condition for either self-focused pronouns ( $M_{control} =$ 9.23; t(75) < .8, p > .4) or other-focused pronouns (M<sub>control</sub> = .34; t(75) < 1.6, p > .1).

Third, Study 2 illustrates that broadcasting does little to move people away from their default tendency for selffocus and self-presentation. Broadcasting had the same effects as the control conditions on these measures. Thus, the action comes from narrowcasting because communicating with one person increases attention on others.

Fourth, the study casts doubt on alternative explanations. Even controlling for audience closeness (i.e., both broadcasters and narrowcasters interacted with strangers), audience size still affected what people shared. Furthermore, anxiety, arousal, embarrassment, and temporary feelings of closeness did not differ between conditions, suggesting that they did not drive the effects.

Fifth, by analyzing actual conversations, allowing participants to write about any event they wanted, and using an impartial measure of linguistic styles to code for valence and personal pronouns, our results underscore the generalizability of these effects.

### STUDY 3: SHARING USEFUL CONTENT WITH FRIENDS VERSUS ACQUAINTANCES

Study 2 demonstrates that audience size affects the sharing of self-presentational content even when audience closeness is held constant. This is important because interpersonal closeness is one feature of social relationships that affects the sharing of positive versus negative information (Dubois, Bonezzi, and De Angelis 2013). In Study 3, we explore audience closeness more directly by manipulating it and examining whether it interacts with audience size.

Furthermore, whereas the first two studies examine selfpresentation, Study 3 begins to examine how audience size influences the sharing of useful content. We use stimuli from a famous study of information sharing (Frenzen and Nakamoto 1993) and aim to replicate its findings (i.e., that people share useful information with closer others) while investigating whether audience size operates beyond the effect of closeness. As we theorized previously, narrowcasting should lead people to share more useful content, regardless of whether they are interacting with close or distant others.

### Methods

One hundred twenty-eight participants (52.3% female, mean age = 33 years) were randomly assigned to condition in a 2 (audience size: narrow vs. broad) × 2 (audience closeness: friend vs. acquaintance) between-subjects design. As in Study 1, we manipulated audience size by asking participants to imagine that they were communicating with one person (narrowcasting) or a group of people (broadcasting).

We also manipulated relationship type. Participants imagined that the audience was composed of either close friend(s) with whom they often get together or acquaintance(s) with whom they do not often get together. A manipulation check (1 = "not at all close," and 7 = "extremely close") confirmed that participants in the friend condition felt closer to their audience than participants in the acquaintance condition (M<sub>friend</sub> = 5.77 vs. M<sub>acquaintance</sub> = 4.09; F(1, 124) = 48.22, p < .001).<sup>5</sup>

Participants then read a scenario describing an upcoming business suit sale at a nearby prestigious clothing store (adapted from Frenzen and Nakamoto 1993). They were told that expensive suits would be discounted 15% and that few people currently know about the sale because it is not advertised. They were then asked how likely they would be to share this information with the person/people with whom they were communicating (0% = "certain not to tell them," and 100% = "certain to tell them"). Because they were told that the person/people did not already know about the sale, this measure reflects how likely participants would be to share a particularly useful piece of information.

Next, we measured sharer focus to test the proposed mechanism. Participants were asked, "How much were you thinking about yourself versus others when deciding whether to share this information?" (0 = "very much think-

<sup>&</sup>lt;sup>5</sup>There was no main effect of audience size on closeness, nor was there a significant audience size × audience closeness interaction (F < .4, p > .5).

ing about others," and 100 = "very much thinking about the self").

### Results

*Usefulness*. Replicating Frenzen and Nakamoto's (1993) findings, a 2 × 2 analysis of variance (ANOVA) revealed a main effect of audience closeness such that people were more likely to share useful information with friends than with acquaintances ( $M_{friend} = 81.80\%$  vs.  $M_{acquaintance} = 58.26\%$ ; F(1, 124) = 20.50, *p* < .001). Consistent with our theorizing, however, there was also an effect of audience size such that narrowcasting increased people's willingness to share the useful information ( $M_{narrow} = 76.74\%$  vs.  $M_{broad} = 61.37\%$ ; F(1, 124) = 8.51, *p* < .01). There was no audience size × audience closeness interaction (F < .2, *p* > .6).

Sharer focus. A two-way ANOVA also revealed a significant effect of audience size on sharer focus such that narrowcasting led people to think more about others ( $M_{broad} = 43.37$  vs.  $M_{narrow} = 29.98$ ; F(1, 124) = 6.67, p = .01). There was no main effect (F < .4, p > .5) or interaction (F < .5, p > .5) resulting from audience closeness.

*Mediation analysis.* The bootstrap mediation method again illustrates that differences in sharer focus drove the impact of condition on sharing useful content (total indirect effect = 7.06, SE = 3.05, 95% CI does not include 0 [14.28, 1.87]). Relative to broadcasting, narrowcasting led people to think more about others ( $a_1 = 13.39$ ), which increased their willingness to share useful content ( $b_1 = .52$ ).

#### Discussion

The results of Study 3 further support our theory and hypothesized mechanism. Compared with broadcasting, narrowcasting led people to share more useful content because it shifted sharer focus away from the self and toward others.

Furthermore, the results demonstrate that the effects of audience size are distinct from closeness. Although we replicated the finding that people are more likely to share useful information with close others (Frenzen and Nakamoto 1993), we demonstrate that the effect of audience size operates beyond audience closeness. Moreover, although the effect of audience size on useful sharing is mediated by sharer focus, audience closeness did not affect this measure. This finding underscores our suggestion that audience size and closeness are distinct, shedding more light on their underlying relationship.

#### STUDY 4: MANIPULATING SHARER FOCUS

Study 4 further examines the role of sharer focus by manipulating it directly and testing whether it moderates the effect of audience size on sharing self-presentational and useful content. In addition to manipulating audience size, we ask half our participants to list the name(s) of the people receiving their message. Prior research has found that reading specific information about a comparison target (or even just seeing the person's name) reduces egocentric tendencies and increases how much people think about that other person (Alicke et al. 1995; Weinstein 1983). Consequently, if, as we suggest, audience size influences the content people share by shifting sharer focus, encouraging people to concentrate on their audience by listing the other(s) with whom they are sharing should make broadcasting seem more like narrowcasting.<sup>6</sup>

#### Study 4a

Study 4a examines how audience size affects whether people share useful content. Consistent with Study 3, we predict that compared with broadcasting, narrowcasting should boost sharing of useful information.

*Methods*. One hundred forty-two respondents (65.5% female, mean age = 20 years) were randomly assigned to condition in a 2 (audience size: narrow vs. broad)  $\times$  2 (sharer focus: control vs. other-focus) between-subjects design. Similar to Studies 1 and 3, participants were randomly assigned to think about communicating online with one friend (narrowcasting) or a group of friends (broadcasting).

We separately manipulated sharer focus by asking some participants to list the specific other(s) with whom they were sharing. Half of the participants (other-focus condition) were asked to write down the names of the specific person or people with whom they were communicating.

All participants were then given a list of eight useful things they might share with others (e.g., "information about how to buy tickets to a really popular upcoming concert," "a coupon for a discount") and asked to rate how likely they would be to share each with the person(s) with whom they were communicating.<sup>7</sup> For the full list of items, see Web Appendix B. Responses to these items were highly correlated ( $\alpha = .78$ ) and averaged to form a measure of the likelihood to share useful content.

*Results*. In addition to a main effect of sharer focus (F(1),  $(138) = 4.54, p = .04), a 2 \times 2$  ANOVA revealed the predicted audience size  $\times$  sharer focus interaction (F(1, 138) = 5.65, p = .02; see Figure 3). Consistent with Study 3, among control participants, narrowcasting boosted the sharing of useful content ( $M_{narrow} = 4.39$  vs.  $M_{broad} = 3.65$ ; F(1, 138) = 7.54, p < .01). When participants focused more on others by listing the names of the people with whom they were sharing, however, this difference disappeared ( $M_{narrow} = 4.34$  vs.  $M_{broad} = 4.50$ ; F < .4, p > .5). In other words, whereas there was no effect of sharer focus in the narrowcasting condition (F < .1, p > .8), there was an effect in the broadcasting condition such that listing the name of the recipient(s) increased people's willingness to share useful information (F(1, 138) =10.30, p < .01). As we predicted, boosting other-focus led broadcasting to more closely resemble narrowcasting.

### Study 4b

Study 4b uses the same manipulations as Study 4a to test how audience size influences sharing self-presentational content. In addition, we manipulate protective and acquisitive self-presentation (using slightly different wording of

<sup>&</sup>lt;sup>6</sup>A pretest (N = 168) confirmed that listing the names of audience members interacted with audience size to affect sharer focus (F(1, 164) = 4.41, p = .04). Among broadcasters, listing recipients' names increased how much people reported thinking about their audience (M<sub>list</sub> = 6.18 vs. M<sub>no list</sub> = 5.21; F(1, 164) = 11.98, p < .01). Among narrowcasters, however, whom we expected to be focused on others already, there was no additional effect of listing names on the degree to which participants were thinking about their audience (M<sub>list</sub> = 6.00 vs. M<sub>no list</sub> = 5.85; F < .5, p > .5).

<sup>&</sup>lt;sup>7</sup>Pretest participants (N = 47) who rated each item according to its usefulness confirmed that the items were significantly more useful than the scale midpoint (M = 4.91, t(46) = 7.88, p < .001).



the same response items) to test whether the effects of audience size are stronger for one type of self-presentation than the other. Given that prior research (Baumeister et al. 2001; Tice 1991) and Studies 1 and 2 have found protective selfpresentation to be more prevalent than acquisitive, we expect to find the same here.

*Methods*. One hundred fifty-eight respondents (60.1% female, mean age = 20 years) were randomly assigned to condition in a 2 (audience size: narrow vs. broad)  $\times$  2 (sharer focus: control vs. other-focus)  $\times$  2 (self-presentation type: acquisitive vs. protective) between-subjects design. First, we used the audience size and other-focus manipulations from Study 4a.

Next, we manipulated acquisitive versus protective selfpresentation. Participants were asked to rate how likely they would be to share each of 15 self-presentation items. We kept the topic of the items (e.g., grades) similar across conditions, but in the acquisitive (protective) condition, the items were framed as making the self look good (bad) (e.g., "the fact that you got a good [bad] grade on your recent test," "how you recently got a great new pair of shoes on sale [spent too much money on an average pair of shoes]"; for the full list of items, see Web Appendix B).<sup>8</sup> Responses to these items were highly correlated in each condition and combined to create measures of willingness to share acquisitive self-presentation items (things that make the self look good;  $\alpha = .90$ ) and protective self-presentation items (things that make the self look bad;  $\alpha = .79$ ).

*Results*. A 2 × 2 × 2 ANOVA on willingness to share revealed main effects of audience size (F(1, 150) = 12.37, p = 0.001), sharer focus (F(1, 150) = 33.12, p < 0.001), and self-

presentation type (F(1, 150) = 23.10, p < .001) as well as a two-way sharer focus × self-presentation type interaction (F(1, 150) = 4.05, p < 0.05). More importantly, consistent with prior theory, these effects were qualified by a threeway interaction (F(1, 150) = 3.58, p = .06). To understand the nature of this interaction, we examine the two types of self-presentation items separately.

Among participants who considered protective selfpresentation, in addition to main effects of audience size (F(1, 78) = 13.20, p < .001) and sharer focus (F(1, 78) =31.62, p < .001), the results revealed the predicted audience size  $\times$  sharer focus interaction (F(1, 78) = 6.90, p = .01; see Figure 4, Panel A). In the control condition, the effect of audience size mirrored our prior studies. Compared with narrowcasting, broadcasting decreased participants' willingness to share things that would make them look bad  $(M_{broad} =$ 2.37 vs.  $M_{narrow} = 3.99$ ; F(1, 78) = 19.59, p < .001). However, when participants listed the names of the people with whom they were sharing, thereby increasing other-focus, this difference disappeared ( $M_{broad} = 4.51$  vs.  $M_{narrow} =$ 4.77; F < .6, p > .4). In contrast, among participants who considered acquisitive self-presentation, there was only a main effect of sharer focus (F(1, 72) = 6.69, p = .01) and no

Figure 4 THE MODERATING EFFECT OF LISTING AUDIENCE MEMBER(S) ON SHARING (STUDY 4B)

A: Listing Audience Member(s) Moderates the Impact of Audience Size on Sharing Items That Make the Self Look Bad



B: Listing Audience Member(s) Has No Effect on the Impact of Audience Size on Sharing Items That Make the Self Look Good



<sup>&</sup>lt;sup>8</sup>Pretest participants (N = 63) rated each item on how sharing it would make the sharer look. One-sample t-tests confirmed that acquisitive items made the sharer look good (i.e., better than scale midpoint, M = 5.19, t(62) = 12.64, p < .001), while protective items made the sharer look bad (i.e., worse than scale midpoint, M = 3.09, t(62) = -13.42, p < .001).

audience size × sharer focus interaction (F < .1, p > .9; see Figure 4, Panel B).

### Discussion

The results of Study 4 extend the findings of the prior studies and provide further evidence for the mechanism behind the observed effects. First, audience size influenced what participants were willing to share. Compared with broadcasting, narrowcasting increased people's willingness to share useful content. Broadcasting, however, increased protective self-presentation, decreasing people's willingness to share content that made them look bad.

Second, consistent with our underlying conceptualization, sharer focus moderated these effects. When participants listed the names of their audience recipient(s), the impact of audience size dissipated, and broadcasting seemed more like narrowcasting. The finding that a manipulation that increased other-focus made broadcasting more like narrowcasting underscores the notion that the effects of audience size are driven by shifts in sharer focus.

Third, consistent with prior work and the first two studies, audience size had a stronger impact on protective (vs. acquisitive) self-presentation.

## STUDY 5: MANIPULATING SELF-PRESENTATION AND USEFULNESS SIMULTANEOUSLY

Study 5 further examines the relationship between selfpresentation and usefulness by manipulating the two constructs simultaneously. In the first four studies, we picked items so that the correlation between self-presentation and usefulness was low. However, to explicitly examine whether self-presentation and usefulness are distinct constructs, in Study 5 we manipulate them orthogonally and observe whether the effect of audience size on each one can be independent of the other.

In addition, we further test the underlying mechanism. We again measure sharer focus and examine whether it mediates the effects of audience size on whether people share both self-presentational and useful content.

Finally, we also test whether the public nature of the communication can explain the results. We hold the public nature of sharing constant by examining broadcasting and narrowcasting within a purely public domain (i.e., Facebook).

#### Methods

One hundred thirty-one participants (42.0% female, mean age = 31 years) were randomly assigned to condition in a 2 (audience size: narrow vs. broad)  $\times$  2 (self-presentation: look good vs. look bad)  $\times$  2 (usefulness: useful vs. not useful) design, with audience size manipulated between subjects and self-presentation and usefulness manipulated within subject. First, participants were asked to imagine that they recently took a university course and were thinking of sharing their experience on Facebook. Participants either imagined sharing their experience with all of their friends in a Facebook status update (broadcasting condition) or with one of their friends in a Facebook wall post (narrowcasting condition).<sup>9</sup>

A manipulation check confirmed that narrowcasters imagined sharing with fewer others than did broadcasters ( $M_{narrow} = 1.1 \text{ vs. } M_{broad} = 18.3; t(129) = -2.73, p < .01$ ).

Second, we manipulated the type of content being shared. Specifically, we manipulated self-presentation by how well the participant did in the class. In the look good (bad) condition, participants were told that they got an A (a C) in the class. We manipulated usefulness by whether the course was going to be offered again. In the useful (not useful) condition, participants were told that the course would (not) be offered again. By fully crossing these two factors (self-presentation and usefulness), we had a total of four types of experiences that participants could share. Note that we pretested these experiences so that they orthogonally manipulated selfpresentation and usefulness. Only the self-presentation manipulations influenced how good people looked (better when they got an A vs. a C), and there was no main effect or interaction from the useful manipulation. Only the useful manipulation influenced the usefulness of the content (more useful when the course would be offered again), and there was no main effect or interaction from the self-presentation manipulation.<sup>10</sup>

Participants were asked how likely (1 = "not at all," and 7 = "extremely") they would be to share each of four types of experiences in the situation described (order counterbalanced). We assessed self-presentation by the difference between the participants' likelihood to share experiences that made the self look good versus bad (i.e., whether the student got an A vs. a C), and we assessed usefulness by the difference between the participants' likelihood to share experiences that would be useful versus not useful to the recipient (i.e., whether the course would vs. would not be offered again). Finally, to test the proposed mechanism behind these effects, we measured sharer focus in the same way as Study 3.

### Results

As we expected, there was no audience size × selfpresentation × usefulness interaction (F < 1.3, p > .25), nor a self-presentation × usefulness interaction (F < .8, p > .40). This result confirms our pretest and indicates that these two constructs are acting independently.

Self-presentation. Not surprisingly, a repeated measures ANOVA revealed a main effect of self-presentation: people were more willing to share content that made them look good than bad (F(1, 129) = 95.29, p < .001). More importantly, this effect was qualified by an audience size × self-presentation interaction (F(1, 129) = 5.57, p = .02). People consistently preferred to share content that made them look good (vs. bad), but compared with narrowcasting (M<sub>look good</sub> = 4.70 vs. M<sub>look bad</sub> = 3.38; F(1, 129) = 27.19, p < .001), broadcasting increased this tendency (M<sub>look good</sub> = 4.82 vs. M<sub>look bad</sub> = 2.65; F(1, 129) = 74.03, p < .001).

<sup>&</sup>lt;sup>9</sup>A pretest (N = 40) confirmed that whereas status updates and wall posts are viewed as similarly public (t(39) < .8, p > .4), wall posts are viewed as more targeted, or directed at particular audience members (t(39) = 3.81, p < .001).

<sup>&</sup>lt;sup>10</sup>In addition, the pretest (N = 48) indicated that participants rated lookgood experiences as making the person look better than the scale midpoint (M = 5.59; t(47) = 7.41, p < .001), and participants rated look-bad experiences as making the person look worse than the scale midpoint (M = 3.35; t(47) = 3.94, p = .001). Similarly, the pretest indicated that participants rated useful experiences as more useful than the scale midpoint (M = 5.84; t(47) = 6.85, p < .001), and participants rated not-useful experiences as less useful than the scale midpoint (M = 3.00; t(47) = 3.86, p = .001).

In other words, and consistent with the previous studies, relative to narrowcasting, broadcasting decreased participants' willingness to share content that would make them look bad (F(1, 129) = 17.23, p < .01). Audience size, however, did not significantly affect participants' willingness to share content that would make them look good (F(1, 129) < .3, p > .6).

*Usefulness*. As we expected, a repeated measures ANOVA revealed a main effect of usefulness: people were more willing to share content that was useful (vs. not useful) to the recipient (F(1, 129) = 153.74, p < .001). More importantly, this effect was qualified by an audience size × usefulness interaction (F(1, 129) = 4.59, p = .03). People consistently preferred to share content that was useful (vs. not useful) to others, but compared with broadcasting (M<sub>useful</sub> = 4.50 vs. M<sub>not useful</sub> = 2.97; F(1, 129) = 53.02, p < .001), narrowcasting increased this tendency (M<sub>useful</sub> = 5.12 vs. M<sub>not useful</sub> = 2.95; F(1, 129) = 104.92, p < .001). In other words, narrowcasting increased participants' willingness to share useful content (F(1, 129) = 12.71, p < .01). However, audience size did not have an effect on participants' willingness to share content that was not useful (F(1, 129) < .1, p > .9).

Sharer focus. As we predicted, condition also influenced sharer focus (F(1, 129) = 4.23, p = .04). Compared with broadcasting (M = 54.14), narrowcasting shifted focus from the self toward others (M = 45.12).

Mediation analysis. To test the mediating role of sharer focus, we again used the bootstrap mediation method (PROCESS macro; Hayes, Preacher, and Myers 2011). As we predicted, sharer focus drove the impact of audience size on what people shared. First, sharer focus mediated the effect of audience size on sharing self-presentational content (difference between willingness to share things that make the self look good vs. bad; total indirect effect = .24, SE = .14, 95% CI [.03, .59]). Relative to narrowcasting, broadcasting led participants to think more about the self (a = 9.01), which increased their likelihood to share selfpresentational content (b = .03). Second, sharer focus also mediated the effect of audience size on sharing useful content (difference between willingness to share useful and nonuseful content; total indirect effect = -.12, SE = .08, 95% CI [-.34, -.01]). Narrowcasting led participants to think less about the self and more about the audience (a =9.01), which increased their likelihood to share content that is useful to others (b = -.02).

### Discussion

The results of Study 5 underscore the findings of the first five studies and provide further evidence for the underlying mechanism behind these effects. First, audience size influenced what people shared. People were more willing to share content that made them look good (vs. bad), but this tendency was stronger when they were broadcasting (posting a Facebook status update) than narrowcasting (posting a Facebook status update) than narrowcasting (posting to share content that was useful (vs. not useful) to the recipient, but this tendency was stronger when people were narrowcasting than when they were broadcasting.

Second, we demonstrate that self-presentation and usefulness are distinct constructs and can be manipulated orthogonally. Thus, even though they may overlap in certain situations, we are able to isolate the effects of audience size on each one independently.

Third, these effects were driven by the degree to which people were thinking about themselves versus others. A single item of sharer focus mediates the effect of audience size on both self-presentation and usefulness, even in a situation in which the two constructs were manipulated orthogonally. This finding suggests that a shift in sharer focus can concurrently influence two unique dependent measures. In other words, narrowcasting shifts focus away from the self and toward others, which simultaneously encourages people to share (1) more useful content and (2) less self-presenting content. Fourth, by holding the public nature of the sharing constant, we cast doubt on the notion that differences in the public nature of communication are driving the effects.

#### GENERAL DISCUSSION

Communication always involves an audience, whether real or imagined. This audience may consist of just one person or multiple people. In the current research, six experiments demonstrate how audience size affects what people share. Relative to narrowcasting, broadcasting leads people to (1) avoid sharing content that makes them look bad (Studies 1, 4b, and 5), (2) reframe negative events to make the self look less bad (Study 1), and (3) avoid negativity (Study 2). Narrowcasting, in contrast, decreases the tendency to share self-presentational content and leads people to share things that are useful to their conversation partner (Studies 3, 4a, and 5).

The studies also demonstrate that sharer focus drives these effects. Narrowcasting encourages people to think less about the self and more about others, which reduces the sharing of content that makes them look bad and increases the sharing of useful content. Our studies establish direct mediational evidence (Studies 2, 3, and 5), demonstrate differences in self- and other-focused pronoun usage (Study 2), and show that inducing other-focus leads to the same effects as narrowcasting (Studies 4a and 4b).

Finally, showing these effects across a wide range of manipulations and outcomes illustrates their generalizability. The effects hold for willingness to share (Studies 3, 4a, 4b, and 5), written messages (Study 1), and actual face-toface communication (Study 2). In addition, they persist regardless of whether writing is relatively constrained (Study 1) or uncontrolled (Study 2) and whether messages are human coded (Study 1) or analyzed using more objective text analysis (Study 2).

We also reveal that these effects operate beyond audience closeness. Although audience closeness does influence what people share (Study 3), we rule out closeness as an alternative mechanism for our effects by controlling for it (Study 2), showing an independent effect of audience size when manipulating it directly (Study 3), and demonstrating that temporary feelings of closeness do not drive the effects (Study 2). We also repeatedly show that audience size affects communication with friends (Studies 1, 3, 4a, 4b, and 5), revealing that it is not restricted to communication with strangers or acquaintances.

### Theoretical Contributions and Implications

Our research makes several contributions. First, it sheds light on the drivers of word of mouth and interpersonal communication. Recent research has delved more deeply into why people share (Berger and Schwartz 2011; Cheema and Kaikati 2010; Chen and Berger 2013; Moldovan, Goldenberg, and Chattopadhyay 2011; Wojnicki and Godes 2011; for a review, see Berger 2013), but researchers are just beginning to address how the audience shapes what people talk about. Although some research has focused on audience type (e.g., strong vs. weak ties; Frenzen and Nakamoto 1993), how the number of followers influences posting frequency in social media (Toubia and Stephen 2013), and how the number of people in a focus group affects self-disclosure (Corfman 1995), no prior research has investigated how audience size shapes the type of content people share. We fill this gap, showing that whether people communicate with a large or small audience can influence what they talk about by changing their focus.

Second, this article advances prior research on social influence and group behavior. Social impact theory (Latane 1981) suggests that social influence's force increases with a greater number of sources (or others). Yet, although Latane's model bridges many diverse findings, it does not demonstrate a unifying mechanism. We establish a specific cognitive mechanism through which audience size influences what communicators talk about and why (i.e., sharer focus). Similarly, Mullen's (1983) theory on the other-total ratio in group behavior suggests that as the number of others in a group increases, people become more concerned with standards of appropriate behavior. Yet whereas this work suggests that larger groups may increase self-attention, our process is distinct, showing that narrowcasting drives the effects. We demonstrate that people naturally focus on themselves and that broadcasting does not shift them away from this default; narrowcasting, however, changes behavior because a single person can boost attention on others.

Third, this work provides insight into when the communication sender versus receiver plays a relatively larger role in what people share. We examined the role of audience size, but other factors should also play a role. For example, arousal encourages self-focus (Wegner and Giuliano 1980), so it might increase the weight people put on their own interests and opinions when deciding what to share. The goal of the communication may also matter. If people are trying to sell a product, they may be particularly attentive to others' needs, regardless of audience size, whereas people may be predominantly self-focused at a job interview. Finally, there may be cultural differences: people from collectivist societies may be less naturally self-focused than those from individualist societies.

Fourth, our work helps explain why social media posts (e.g., Facebook, Twitter) tend to be self-focused. People often "brand" themselves through social media updates and personal websites (Schau and Gilly 2003), and researchers have discussed the relationship between social media and self-promotion (Buffardi and Campbell 2008). The written (Berger and Iyengar 2013; Walther 2007) and public (Ratner and Kahn 2002) nature of such communication should increase self-presentational concerns, but our research identifies a third factor. Posting on social media often involves a

large audience (e.g., by sharing comments with hundreds or thousands of "friends" or "followers"). Our findings suggest that such broadcasting does little to shift people away from their default tendency to focus on the self and thus may contribute to the disproportionate degree of self-presentation in social media.

This study has important implications for consumer welfare. Because social media posts can make others' lives look so fantastic, using social media can decrease well-being and make one's own life seem worse in comparison (Chou and Edge 2012). Our results suggest that broadcasting may be unrepresentative of everyday life, and greater awareness of this bias may reduce the negative inferences viewers make about the relative quality of their own lives.

More broadly, our results have significant implications for interpersonal communication. At an individual level, these findings can help consumers manage how others perceive them. For example, if a politician or public figure has been advised to use less negative language, he or she may want to schedule larger public events and fewer one-on-one appearances. In a business context, it might be strategic for people to hit "reply" instead of "reply all" when responding to group e-mails if they want to be less self-focused and more in tune with their audience. Or, if replying to the full group is necessary, listing each person's name (instead of a general group salutation) may induce other-focus and encourage the sharer to be more useful.

Our results also have implications for encouraging word of mouth. Companies that sell useful products (e.g., health care) may benefit from providing web forms that allow for narrow, personalized messages. Conversely, companies that sell products related to self-presentation (e.g., designer clothing) may benefit from facilitating easy broadcasting (e.g., one-click posting on social media). Similarly, firms aiming to establish consumer social networks might consider beginning with dyads rather than group conversations if they want people to transmit useful information to one another. Other firms might benefit from organizing group interactions among their consumers when they are trying to promote a brand community that presents their consumers (and thus the brand) in a positive light.

### Directions for Further Research

As with any preliminary investigation, there is always more to explore. Consistent with prior research (Baumeister et al. 2001; Tice 1991), we find effects for protective but not acquisitive self-presentation. In Study 4, for example, audience size affects whether people share events when they are framed as making the self look bad but not when they are framed as making the self look good. This effect occurs even though we tested a variety of types of acquisitive selfpresentation, including (1) direct bragging about the self, (2) indirect bragging about a self-relevant domain, and (3) linking of the self to positive personal outcomes.

Although the word-of-mouth literature has not considered this distinction between acquisitive and protective selfpresentation previously, it deserves further study. Lay intuition might suggest that acquisitive presentation occurs more frequently, but this may be caused by biases in attention and memory. It is much more difficult to notice the absence of negative things than to perceive the presence of bragging. Furthermore, the few word-of-mouth findings categorized as acquisitive in retrospect (De Angelis et al. 2012; Wojnicki and Godes 2011) all involve explicit needs to bolster self-enhancement. Thus, although such situations may lead people to say positive things about a chosen experience (e.g., "Everyone liked the restaurant I picked"), it is less clear whether these effects apply more broadly.

Further research might also examine the relationship between self-presentation, usefulness, and information valence. As noted previously, although self-presentation and usefulness may overlap in certain situations (e.g., sharing something useful can make the sharer look good), they are not significantly correlated in the content we used. Similarly, although usefulness could theoretically vary with valence (e.g., a positive restaurant review could be more or less useful than a negative review), further coding indicates that they are distinct constructs in our studies. Thus, although sharing useful things may be self-presenting in some contexts and sharing positive (or negative) things might be more useful in other contexts, that does not seem to be what is happening in our studies.

That said, researchers should further examine when these different constructs might overlap and when people might trade off one for the other. One could argue that negative information might be more useful, for example, because it tells people what to avoid. Alternatively, one could argue that positive information is more useful because people need to know which of the myriad of available options to approach. More insight into the relationships between these constructs would be beneficial.

In addition, further research might also investigate whether people *select* different audience sizes depending on what they want to talk about. This article demonstrates that manipulating audience size has a causal impact on what consumers share. However, in situations in which the audience size is not fixed, consumers may pick different audience sizes on the basis of the content of their communication.

It would also be worthwhile to consider other ways in which audience size influences sharing. For example, larger audiences are more likely to involve heterogeneous groups and may thus elicit more cautious opinions. Similarly, people who communicate in "multiple-audience" contexts are more likely to acknowledge multiple viewpoints and present more than one side of an argument (Schlosser 2005). Finally, it might be the case that conversational norms (Grice 1975) differ when talking to one person compared with talking to a group, which would shift the types of content that people believe they are expected to share in each context.

Finally, our research has focused on two distinct categories: narrowcasting (one person) and broadcasting (multiple people). This categorization reflects the unique psychology involved in interacting with one person, consistent with work in social impact theory (Latane 1981), the identifiable victim effect (Jenni and Loewenstein 1997), and impression formation (Hamilton and Sherman 1996; Hastie and Park 1986). In each case, contact with one person has a special force that makes contact with even two people markedly different, a phenomenon supported by psychophysical laws (Slovic 2007; Weber 1834). However, we recognize that audience size is a continuum and that the self- versus otherfocus trade-off may be more fluid, with people gradually thinking more about others as audience size decreases. Similarly, to the extent that a person can induce other-focus when communicating with a group, broadcasting may seem more like narrowcasting. For example, in addition to the listing manipulation from Study 3, describing a large audience as consisting of similar people or as an entitative unit (Smith, Faro, and Burson 2013) could make people share more useful content and less self-presentational content. Future studies might examine this question in greater detail.

In conclusion, the current research demonstrates one way in which audience size affects interpersonal communication. By integrating research on the drivers of word of mouth with research on self/other trade-offs, this article deepens our understanding of what people share and why.

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# WEB APPENDIX

Broadcasting and Narrowcasting: How Audience Size Affects What People Share

# ALIXANDRA BARASCH JONAH BERGER\*

# WEB APPENDIX A

# STUDY 1

Positive events:

- You went with your friend to see a new movie in the theaters, and it was really great.
- Your friend complimented you on your new shirt, which is one of your favorite brands.
- You sent a YouTube video to your friends that they really liked.
- You bought a new pair of shoes on sale.
- You tried a new recipe from your favorite food website, and it came out perfectly.

# Negative events:

- You overslept and realized you had missed your favorite morning show.
- You were late to your meeting at a local coffee shop.
- You picked out a special dessert at the local bakery that you both thought was not that good.
- You watched your favorite team play in a sports game, but your team lost.
- You went to go get a drink at a local bar, but they ran out of your favorite beer.

\*A pretest (N = 52, how the content made the sharer look, 1= "Extremely bad" to 7 = "Extremely good") confirmed that the selected events made the self look good and bad, respectively (significantly above or below the scale midpoint:  $M_{look good} = 5.33$ , t(51) = 15.52, p < .001;  $M_{look bad} = 2.58$ , t(51) = 18.16, p < .001).

# EXAMPLE PARAGRAPHS WRITTEN BY PARTICIPANTS

# Broadcasting

(Reframe Score = 5, Number of positive events minus number of negative events = 2)

Hey guys! I had a great weekend! I went with a couple of friends to see Iron Man 3. It was PHENOMENAL. I really really enjoyed it! I thought it was way better than the second movie. It was very different from the previous two movies in that it had a different focus. Regardless, it was great. I also got popcorn, but it was really salty. / However, I did oversleep on Saturday and missed my favorite morning show. I guess I was really tired- more tired than I thought. Oh well, I can just watch a rerun on the internet! I sent the boyfriend this youtube video of a screaming goat that I thought was hilarious. It was a mashup of Taylor Swift's "I knew you were trouble" video and a goat that screamed liked a human. He thought it was funny too. Oh and I baked a cheesecake! The boyfriend and I made a cheesecake to bring over to a friend's house and it turned out better than we expected. The middle was a little soft, but it was still pretty yummy. Talk to you guys later!

## Narrowcasting

(Reframe Score = 2, Number of positive events minus number of negative events = -1) I hope this email finds you well. I guess I'll start by telling you guys about the interesting day I had yesterday. So, the night before I went out to the Irish Pub in my neighborhood and had a ton of beer with some of my fraternity brothers. But they were out of jagermeister. So it wasn't a shock that I woke up the next morning at 10 oclock; an hour after Mike and Mike in the morning! I don't have to tell you guys how much I love that show. So my day had a rocky start. After a brief meeting with my mentor, which I was late for by the way, I met up Charlize to go see a movie. The movie was great and Charlene was even better. After the movies I took her to the Cheesecake Factory for some dessert but they were closed and we had to settle for a Hot n Crusty around the corner. Womp Womp! Anyways, I dropped Charlize off at home and went home to work on the video. / / On my way home this guy complimented me on my favorite shirt. You know? The one you guys always laugh at me for wearing. He said the shirt was swanky and that I had a unique sense of style. So take that! But back to the video, when I got home I made the video in like 2 hours of pure creative bliss.

# WEB APPENDIX B

# USEFUL ITEMS USED IN STUDY 4A

- A coupon for a discount you just received
- A review for a new restaurant that just opened
- Course and professor ratings
- Information on how to buy tickets to a popular upcoming concert
- Something that is useful to them
- An article about candidates for the upcoming election
- Notes for a course midterm
- Information on a useful weight-loss strategy

\* Pretest participants (N = 47) who rated each item based on its usefulness (1 = "Not at all useful to the recipient" to 7 = "Extremely useful to the recipient") confirmed that the items were significantly more useful than the scale midpoint (M = 4.91, t(46) = 7.88, p < .001).

# SELF-PRESENTATION ITEMS USED IN STUDY 4B

# Acquisitive Self-presentation:

- Something that makes you look good
- The fact that you got a good grade on your recent test
- Something that shows how popular you are
- That you recently ran a marathon
- How you recently lost 5 pounds
- Something that makes you look cool
- That your favorite sports team won last night
- A link to a funny youtube video
- That your younger sibling just found out that they got into their dream college
- That you love a new song that most people consider great
- A really positive experience you had recently
- That you did something really fun last weekend
- How much fun you had last night at a concert
- How you recently got a new pair of shoes on sale
- Something that you are really excited about

# Protective self-presentation

- Something that makes you look bad
- The fact that you got a bad grade on your recent test
- Something that shows how unpopular you are
- That you haven't worked out in months
- How you recently gained 5 pounds
- Something embarrassing

- That your favorite sports team lost last night
- A link to a really boring youtube video
- That your younger sibling just found out that they got rejected from their dream college
- That you love a new song that most people would consider a "guilty pleasure
- A really negative experience you had recently
- That you did nothing last weekend
- How boring the concert you went to last night was
- How you recently spent too much money on an average pair of shoes
- Something that you are really dreading

\*Pretest participants (N = 63) rated each item on how sharing it would make the sharer look (1 = "extremely bad to the recipient" to 7 = "extremely good to the recipient"). One-sample t-tests confirmed that acquisitive items made the sharer look good (i.e., better than scale midpoint, M = 5.19, t(62) = 12.64, p < .001), while protective items made the sharer look bad (i.e., worse than scale midpoint, M = 3.09, t(62) = -13.42, p < .001).