

# When, Why, and How Controversy Causes Conversation

ZOEY CHEN  
JONAH BERGER

How does controversy affect conversation? Five studies using both field and laboratory data address this question. Contrary to popular belief, controversial things are not necessarily more likely to be discussed. Controversy increases likelihood of discussion at low levels, but beyond a moderate level of controversy, additional controversy actually decreases likelihood of discussion. The controversy-conversation relationship is driven by two countervailing processes. Controversy increases interest (which increases likelihood of discussion) but simultaneously increases discomfort (which decreases likelihood of discussion). Contextual factors such as anonymity and whether people are talking to friends or strangers moderate the controversy-conversation relationship by impacting these component processes. Our framework sheds light on how, when, and why controversy affects whether or not things are discussed.

Advertisements, issues, and brands vary in how controversial they are. Old Navy ads, for example, are less controversial than ads for United Colors of Benetton. A topic like the weather is less controversial than abortion and gay marriage. Brands like Quaker Oats and Hallmark are less controversial than Marlboro and Walmart. But does controversy affect whether ads, brands, and other topics are discussed? And if so, how?

Common intuition is that more controversy generates more buzz. Media executives think that controversial television shows (e.g., one about life at the Playboy Mansion) are more likely to be discussed (Steel 2011), and public institutions use controversial ads to try to generate conversation about issues like childhood obesity (Grinberg 2012). Consumers hold similar beliefs. When asked to guess the relationship between a

topic's controversy level and people's willingness to discuss it, 91% of pretest participants indicated that controversy should increase the likelihood of discussion (e.g., "controversy sparks conversation" and "if something is controversial, it is bound to be talked about").

But is that actually the case? Are controversial things more likely to be discussed?

Using a mix of field data and laboratory experiments, this article explores how controversy affects conversation. We make three main contributions. First, our findings cast doubt on the assumption that more controversy means more buzz. While moderate levels of controversy increase conversation in some cases, high levels of controversy decrease the likelihood of discussion. In some cases even moderate controversy decreases the likelihood of discussion.

Second, we illustrate the psychological processes behind these effects. We demonstrate that controversy drives conversation through its dual impact on interest and discomfort. Further, we show that contextual factors like anonymity and closeness of the audience moderate the controversy-conversation relationship by affecting these component processes.

Finally, we shed light on the behavioral drivers of word of mouth more generally. While research is beginning to look at why people share some things rather than others (e.g., Berger and Milkman 2012; Berger and Schwartz 2011; Cheema and Kaikati 2010; Wojnicki and Godes 2013; see Berger [2013] for a review), less is known about when different drivers of word of mouth matter more or how somewhat opposing drivers might interact. We examine how the basic drivers that underlie controversy combine to shape word of mouth and how con-

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Zoey Chen (Zoey.Chen@scheller.gatech.edu) is a marketing PhD student at the Scheller College of Business, Georgia Institute of Technology, 800 West Peachtree Street NW, Atlanta, GA 30308. Jonah Berger (jberger@wharton.upenn.edu) is the Joseph G. Campbell Associate Professor of Marketing at the Wharton School, University of Pennsylvania, 700 Jon M. Huntsman Hall, 3730 Walnut Street, Philadelphia, PA 19104. The authors contributed equally, and order is reverse alphabetical. The authors thank Ezgi Akpınar, Alix Barasch, Cindy Chan, Nicholas Lurie, Sarah Moore, Andrew Stephen, Melanie Thomas, and Christophe Van den Bulte for their valuable feedback on earlier versions of this article and Robert Botto for help with data collection. This project was partially supported by the dean's research fund at the Wharton School.

*Ann McGill served as editor and Darren Dahl served as associate editor for this article.*

*Electronically published June 27, 2013*

textual factors moderate these effects by influencing the underlying drivers of discussion.

## WORD OF MOUTH

Word of mouth, and interpersonal communication more broadly, have a huge impact on consumer behavior. They affect everything from the products people buy and the websites they join to the diffusion of innovations and information more broadly (Chevalier and Mayzlin 2006; Godes and Mayzlin 2009; Goldenberg et al. 2009; Leskovec, Adamic, and Huberman 2007; Schlosser 2005; Trusov, Bucklin, and Pauwels 2009).

But while research has examined the consequences of word of mouth, there has been much less attention to its causes or to why people talk about one thing versus another. Research has only begun to look at how content characteristics (Berger 2011; Berger and Milkman 2012; Berger and Schwartz 2011) and individual factors (Angelis et al. 2012; Cheema and Kaikati 2010; Wojnicki and Godes 2013) drive conversation (see Berger [2013] for a review).

Three papers are particularly relevant to our investigation. Berger and Milkman (2012) looked at the virality of online content and found that more practically useful, surprising, interesting, positive, and emotionally arousing news articles are more likely to be highly e-mailed. Relatedly, Berger (2011) found that physiological arousal, even due to factors unrelated to emotion (e.g., running in place), leads people to share. Finally, Berger and Schwartz (2011) found that while more accessible or publicly visible products generate more immediate and ongoing face-to-face word of mouth, more interesting products only get talked about more soon after people first experience them.

Building on this prior work, we investigate how a previous unexplored construct—controversy—affects word of mouth. To do so, we connect controversy to two basic underlying processes, only one of which has been identified by past research to drive word of mouth. As discussed below, we demonstrate that controversy drives conversation through interest (Berger and Milkman; Berger and Schwartz 2011) but also through discomfort. More generally, our research shows that the complex word-of-mouth drivers can be understood via the combination of more basic processes. In this case, the effect of controversy—a relatively complex concept—can be understood via basic processes of interest and discomfort.

## CONTROVERSY

Merriam-Webster (2003) broadly defines *controversy* as a “discussion marked . . . by the expression of opposing views.” Controversial topics are ones on which people have different, often polarizing, opinions.

Controversial topics also tend to be issues that people feel strongly about (Boring 1929). People may disagree about which hand soap smells the best, for example, but they are unlikely to find this issue controversial because most people do not care very much about hand soap. Issues

like gay marriage, abortion, and stem cell research, however, are often more controversial because differing opinions are more strongly held. Sometimes these opinions even begin to take on an objective or moral character. Gay marriage advocates, for example, argue that legalizing same-sex marriage is the “right” thing to do while opponents argue that same-sex marriage is “wrong.”

Controversy is also in the eye of the beholder. Sports fans, for example, may find a particular draft pick controversial, while nonfans may not. That said, within cultures there is usually some shared consensus about which topics are more controversial. Abortion is a controversial topic in the United States but is less contentious in Sweden (Ralston and Podrebarac 2008). In sum, controversial issues tend to involve opposing viewpoints that are strongly held.

## CONTROVERSY AND CONVERSATION

We suggest that controversy’s impact on whether something is discussed depends on two countervailing forces. Controversy evokes differences in opinions. As a result, it simultaneously increases interest (which increases the likelihood of discussion) and discomfort (which decreases the likelihood of discussion).

### Controversial Topics Are More Interesting

Esteemed biologist George C. Williams once noted that “controversies [are] what really makes it interesting in biology” (Roes 1998, 10). A pilot study confirmed that controversy evokes interest even beyond academia. Participants were asked to rate how interesting (1 = not at all, 7 = very) a nonspecified topic (“Topic X”) was after being told that it was either highly controversial or not very controversial (between-subjects). Consistent with our theorizing, people expected the controversial topic to be more interesting ( $M_{\text{high}} = 5.75$  vs.  $M_{\text{low}} = 4.14$ ;  $F(1, 39) = 12.24$ ,  $p < .001$ ).

Not surprisingly, more interesting things are often more likely to be discussed (Berger and Milkman 2012; Heath, Bell, and Sternberg 2001). People often talk about things to entertain themselves and others (Heath et al. 2001), and interesting things are simply more entertaining. Talking about interesting things also facilitates self-presentation. Just like the cars we drive or the clothes we wear, the things we say influence how others perceive us (Angelis et al. 2012; Berger and Milkman 2012; Wojnicki and Godes 2013). Talking about interesting rather than boring things should make people seem more interesting (Berger and Milkman 2012; Berger and Schwartz 2011). Taken together, this suggests that controversy boosts interest, which, in turn, increases the likelihood of discussion.

### Controversial Topics Are Uncomfortable to Discuss

At the same time, however, controversial topics can be uncomfortable to talk about, especially when conversation partners have opposing views. People want to be socially

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accepted (Reiss 2004): they want to fit in and have others like them (Baumeister 1998; Goffman 1959). As a result, concerns about others' judgments often affect people's behavior in public situations (Argo, White, and Dahl 2006; Ratner and Kahn 2002).

Controversy tends to draw polarizing, unyielding opinions. While someone may be pro-life, their neighbor may be pro-choice. While someone may be for tax cuts, their friend may be against them. People tend to think that they are right and to ignore the merits of the opposition (Boring 1929; Henle 1973). Consequently, talking about controversial topics can generate interpersonal conflict and people may feel uncomfortable bringing them up because they fear social rejection (Buss 1990). Thus, controversy can increase discomfort, which reduces the likelihood of discussion.

Taken together, the above discussion leads to the following hypothesis:

- H1:** Controversy affects the likelihood of conversation through increasing interest (which increases the likelihood of discussion) and discomfort (which decreases the likelihood of discussion).

Thus controversy's overall impact on likelihood of discussion should depend on the relative strength of these two underlying processes.

## THE MODERATING ROLE OF CONTEXT

To further test our conceptualization, we also examine whether two factors that should moderate the role of discomfort (i.e., anonymity and relationship closeness) also similarly moderate the controversy-conversation relationship. Interesting topics are likely to remain interesting regardless of whether people's identity is disclosed or whether they are talking to friends or strangers. Discomfort, on the other hand, should be a weaker driver of discussion when social acceptance concerns are either less salient (e.g., talking anonymously) or less threatened by discussion of controversial issues (e.g., talking to friends). We examine how anonymity and relationship closeness (friend or stranger) moderate the controversy-conversation relationship and, along the way, deepen our understanding of how contextual factors shape word of mouth.

### Anonymity

People often talk anonymously online (Swidey 2010), and social critics have lamented that anonymity allows people to say nasty, repulsive things that they would not say if their identity was public (Pérez-Peña 2010). Social acceptance concerns should be less salient in these anonymous settings since there is no public "self" that the individual has to manage (Goffman 1959; Ratner and Kahn 2002). Thus discomfort should be a weaker driver of conversation when people are anonymous.

- H2:** Anonymity should moderate the extent to which discomfort mediates the controversy-conversation

relationship. The mediating effect of discomfort should be weaker when people are anonymous.

### Relationship Closeness

Not all identity-disclosed contexts, however, are equivalent. When identities are disclosed, people can categorize conversation partners as close (e.g., friend) or distant others (e.g., stranger). Relationship closeness should moderate social acceptance concerns (and thus the role of discomfort) for a few reasons. First, if close others say something offensive or we disagree with them, it should not affect social acceptance much because that single interaction is unlikely to change our opinion of them. For distant others, however, more is at stake in the current conversation. Interpersonal judgments are more heavily based on the conversation at hand, and as a result people should feel more uncomfortable bringing up controversial topics.

Second, knowing more about close others enables people to tailor what they say to ensure smooth conversation. Knowing that a friend is pro-life, for example, allows us to shape how we talk about our pro-choice views. As a result, thinking about bringing up a controversial topic should be less daunting with close others.

Third, people are motivated to maintain close relationships (Baumeister and Leary 1995). This gives them the freedom and security to bring up even controversial topics they find interesting since they know that their friends are willing to overlook minor disagreements and resolve them if they arise.

Overall then, people should feel more comfortable bringing up controversial topics with close others. Consequently, talking to close others should reduce the role of discomfort in driving the controversy-conversation relationship.

- H3:** Relationship closeness should moderate the extent to which discomfort mediates the controversy-conversation relationship. The mediating effect of discomfort should become weaker as relationship closeness increases.

## THE CURRENT RESEARCH

We use multiple methods to test our theoretical framework. First, we examine the relationship between controversy and conversation using almost 5,000 posts from a real online discussion forum (study 1). Next, we use lab experiments to test the causal impact of controversy on conversation (studies 2A and 2B) and to examine the hypothesized mechanisms (i.e., interest and discomfort, studies 3 and 4). By manipulating anonymity (study 3) and relationship closeness (friend vs. stranger, study 4), we investigate how these contextual factors moderate the controversy-conversation link through interest and discomfort.

Consistent with prior research on word-of-mouth drivers (Berger 2011; Berger and Schwartz 2011; Liu 2006; Moldovan, Goldenberg, and Chattopadhyay 2011), our key de-

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pendent variable is word-of-mouth volume. In studies 1 and 2B, we look at how controversy relates to how much word of mouth content receives (e.g., number of comments posted). In studies 2A, 3, and 4, we examine how controversy affects people's willingness to talk.

### STUDY 1: FIELD DATA

Our first study examines how controversy impacts word of mouth in the field. Using data from an online news website (Topix.com), we investigate how the amount of controversy an article evokes affects the number of comments it receives.

We chose Topix.com for a number of reasons. First, unlike some content-specific websites (e.g., sports blogs), Topix covers a wide range of topics from world news and politics to sports and entertainment. Second, drawing more than 5 million unique visitors (Topix Blog 2008) and over 100 thousand comments a day (<http://www.topix.com/topix/about>), Topix is one of the most popular online news destinations. Note that Topix allows people to comment without disclosing their identity.

Third, and most important, the design of the Topix website allows us to avoid potential confounds due to article featuring. Most online news sites feature articles differentially based on their content. The *New York Times* website, for example, puts certain articles at the top of its home page and hides others behind a trail of links. Preferential featuring influences how much attention articles receive (Berger and Milkman 2012), which likely affects the number of comments they collect. Topix.com, however, does not have this issue. News stories are placed at the top of the page as they come in, which eliminates the possibility that controversial articles receive more comments merely because they are placed in more prominent places on the website.

### Data and Coding

First, we collected data on all articles ( $N = 208$ ) that appeared in the world news, US news, US politics, business, sports, and entertainment sections of Topix.com over a 2-day period (January 24–25, 2011). The articles cover a wide range of topics (e.g., immigration policy, Google, and politics in Afghanistan).

Second, we coded how controversial each article was. We gave two independent raters a definition of *controversy* (i.e., “the extent to which a topic allows for dispute, debate, and differing opinions”), and we asked them to code how much controversy each article evoked (1 = not at all controversial, 7 = very controversial). Different coders' ratings were reasonably correlated ( $r = .68$ ), and these were averaged to form a controversy score. An example of a low-controversy article is “New Hybrid Whale Discovered in Arctic.” An example of a moderately controversial article is “NY Bill Would Ban ‘E-cigarettes’ until FDA Action.” An example of a highly controversial article is “Oklahoma Senator Wants Open Carry, Firearms on Campus.”

Third, we collected the number of comments each article

received. New comments were unlikely to trickle in after the first couple of weeks, so we recorded all comments each article received in the 15 days post release (4,741 total comments; mean per article = 22.79). The distribution of comments was highly skewed (skewness = 3.90, kurtosis = 18.67), so we took the log for our analyses. A small number of articles had no comments, and because the log of zero is undefined, we took the log of (number of comments + 1) to retain these articles.

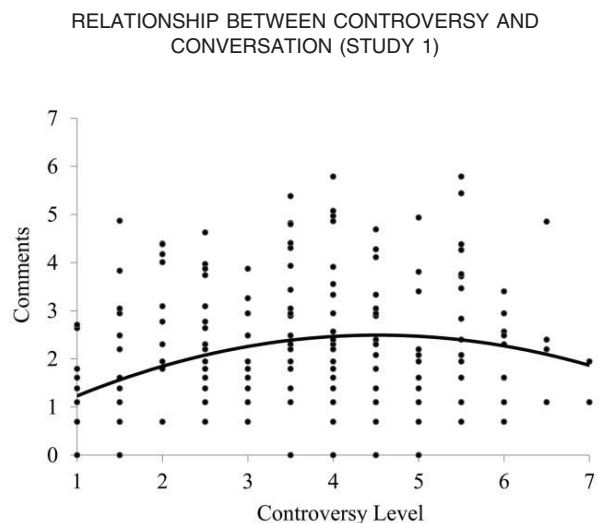
To allow for potential nonlinearities in the relationship between controversy and likelihood of discussion, we regress the number of comments both on controversy (linear) and controversy squared.

### Results

Results indicate an inverted-U relationship between controversy and conversation. While controversy has a positive linear relationship with the number of comments an article receives ( $\beta_{\text{controversy}} = .92$ ,  $SE = .26$ ,  $t(205) = 3.59$ ,  $p < .01$ ), it has a negative quadratic relationship ( $\beta_{\text{controversy}^2} = -.10$ ,  $SE = .04$ ,  $t(205) = -2.84$ ,  $p < .01$ ). As shown in figure 1, low levels of controversy seem to increase conversation. However, past a certain point, additional controversy fails to increase (and even decreases) conversation.

The reversal is particularly noteworthy given the moderate level at which the effects start to reverse. While one might imagine that people avoid talking about extremely controversial things (e.g., partial-birth abortions), results indicate that additional controversy decreases conversation starting at a moderate level of controversy. Taking the first derivative of our model and setting it to zero, we find that the inflection point at which addition controversy starts to decrease conversation is at 4.6, which is not far past the scale midpoint (4).

FIGURE 1



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*Robustness Checks.* These results persist ( $\beta_{\text{controversy}} = .67$ ,  $SE = .27$ ,  $t(197) = 2.45$ ,  $p < .05$ ;  $\beta_{\text{controversy}^2} = -.07$ ,  $SE = .04$ ,  $t(197) = -2.01$ ,  $p < .05$ ) controlling for each article's general topic (e.g., US politics or sports) and length (word count). This casts doubt on the possibility that our results are driven by more people reading certain types of articles (e.g., politics), which also happen to be more controversial. It also casts doubt on the notion that controversial articles are somehow longer or shorter, and this is what is driving the number of comments rather than controversy itself.

The results also persist controlling for arousal, emotionality, and positivity (Berger 2011; Berger and Milkman 2012). Three sets of two independent coders rated each article on each dimension using a 1–5 scale, but the curvilinear impact on controversy on conversation remains even when controlling for these factors ( $\beta_{\text{controversy}} = .90$ ,  $SE = .28$ ,  $t(202) = 3.28$ ,  $p < .01$ ,  $\beta_{\text{controversy}^2} = -.10$ ,  $SE = .04$ ,  $t(202) = -2.75$ ,  $p < .01$ ).

Our results are also robust to data transformation and model selection. When we regress the untransformed comments data on controversy and controversy squared using a negative binomial regression (Greene 2008), we find identical results. A positive linear effect ( $\beta_{\text{controversy}} = 1.23$ ,  $SE = .31$ ,  $z = 3.99$ ,  $p < .01$ ) and a negative squared effect of controversy ( $\beta_{\text{controversy}^2} = -.13$ ,  $SE = .04$ ,  $z = -3.15$ ,  $p < .01$ ). This suggests that our findings are not due to the model form used.

## Discussion

Analysis of a news website indicates that, contrary to popular belief, controversy does not always increase discussion. While moving from low to moderate controversy increases the number of comments an article receives, additional increases in controversy decrease conversation. Further, the results show that this is not simply driven by people not commenting on extremely controversial articles. Comments decrease even at a moderate level of controversy.

One might argue, however, that our results are not driven by an increased likelihood of commenting but by more back-and-forth among a smaller number of posters. Ancillary results cast doubt on this possibility. For a subset of articles, we counted the number of unique posters and regressed it on controversy and controversy squared using a negative binomial regression. Results show that, like comments, the number of unique posters is related to controversy via an inverted U-relationship ( $\beta_{\text{controversy}} = .66$ ,  $SE = .31$ ,  $z = 2.14$ ,  $p < .05$ ;  $\beta_{\text{controversy}^2} = -.08$ ,  $SE = .04$ ,  $z = -1.99$ ,  $p < .05$ ). Thus, while controversy may also affect the number of comments each person posts, it does not appear to be driving the results observed here.

To more thoroughly rule out the possibility that unobserved variables are driving our results, we turn to experiments. They allow us to conduct clean causal tests, examine the hypothesized underlying mechanisms, and manipulate moderators.

## STUDY 2A: CONTROVERSY IN REAL LABORATORY INTERACTIONS

Study 2A uses a tightly controlled laboratory setting to test the causal impact of controversy on the likelihood of discussion. By manipulating controversy and measuring its impact on what people talk about, we can directly examine the effect of controversy on conversation.

Participants listed topics they found low, moderate, and high in controversy and then picked one to talk about in a real conversation with another lab participant. We use a similar conversation context to the field study (anonymous and online) to see whether results are similar (i.e., participants prefer to talk about moderately controversial topics).

### Methods

Two-hundred and ninety-six students at the Wharton School at the University of Pennsylvania participated for pay. After arriving in the lab, they were seated at desktop computers, separated by dividers.

First, participants generated topics of varying controversy levels. To ensure that the topics were as similar as possible on other dimensions aside from controversy, participants were prompted to list a broad topic that comes up in current events. Then they were asked to list three subtopics, one each of which was low, moderate, and high in controversy. Under the broad topic of welfare, for example, participants listed topics like food stamps, unemployment benefits, and universal health insurance. A pretest shows that this manipulation had its intended effects. Participants in the low-controversy condition rated their subtopic as lower in controversy ( $M = 2.87$ ) than participants in the moderate-controversy condition ( $M = 5.13$ ), who rated their subtopic as lower in controversy than participants in the high-controversy condition ( $M = 6.21$ ; all pairwise comparisons significant at  $p < .01$ ).

After listing topics, participants were informed that they would have an anonymous online conversation (via instant messenger) with another participant in the lab, where neither would know the other's identity. Participants picked one of the subtopics they listed to talk about. Then a chat window popped up, and participants were informed that their conversation partner was ready to begin. Participants started the conversation by writing their opinion on the self-selected topic. After sending the message, participants were told that there was an odd number of participants in the session, so they would unfortunately be unable to continue the conversation. Given our theorizing about how discomfort shapes the controversy-conversation link, we also conducted a manipulation check to ensure that participants believed that they would interact with another participant (1 = "did not think I was going to"; 7 = "did think I was going to").

### Results

We had hoped that all participants would believe that they were engaging in a real interaction, but unfortunately this was

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true for only about half the participants. While less than ideal in some ways, this split provides an opportunity to more rigorously test our hypotheses. Discomfort should only kick in at all for those who were sure they were going to have a conversation with another person. For these individuals, we expect an inverted-U relationship between controversy and conversation as discomfort should reduce the willingness to talk about high-controversy topics. For participants who did not expect real conversation, however, we expected a strictly positive relationship between controversy and conversation, as topic choice should be driven solely by interest. To test these ideas, we performed a median split on belief (median = 6, low belief: scores  $\leq 5$ ; high belief: score  $> 5$ ; results persist if using belief = 5 or 7 as split criterion).

As expected, belief moderated the controversy-conversation relationship ( $\chi^2(2) = 9.85, p < .01$ ). For participants who believed that they were going to have a real conversation (and thus discomfort should kick in), we observe the predicted inverted-U pattern ( $\chi^2(2) = 11.42, p < .01$ ): participants were more likely to choose moderately controversial topics (45%) than noncontroversial topics (23%;  $\chi^2(1) = 11.04, p < .01$ ) and extremely controversial topics (32%;  $\chi^2(1) = 3.53, p = .06$ ). There was no difference in choice of the noncontroversial and extremely controversial topics (23% vs. 32%;  $\chi^2(1) = 2.18, p > .10$ ; see fig. 2). In contrast, among participants who did not believe that they were going to have a real conversation (and thus discomfort should be less important), there was the expected positive relationship between controversy and conversation (low: 22%; moderate: 28%; high: 50%;  $\chi^2(2) = 12.55, p = .002$ ).

We find similar results if we create three binary choice variables (indicating if people chose the low-, moderate-, or high-controversy topic) and regress each on the participant's belief score. Results show that as belief increases, choice of the high-controversy topic decreases ( $\beta = -.12, SE = .06, p = .05$ ) but choice of the moderate-controversy topic increases ( $\beta = .13, SE = .06, p = .04$ ). Choice of the low-controversy topic is unaffected ( $\beta = -.01, SE = .07, p > .8$ ). In other words, as belief (i.e., discomfort) increases, people shy away from highly controversial topics in favor of moderately controversial ones.

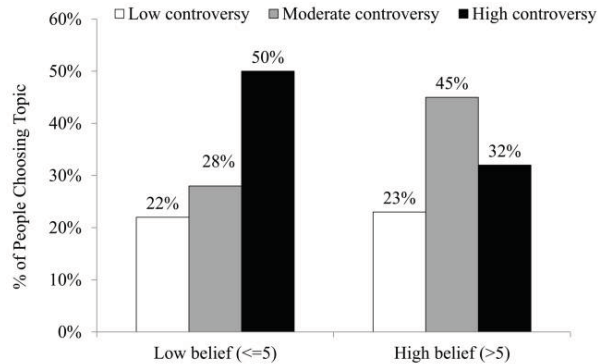
## STUDY 2B: CONTROVERSY IN THE LAB

Study 2B utilizes more experimental control, testing whether our results hold when all participants are given the same low-, moderate-, and high-controversy topics. We identified a set of conversation topics from the same overall domain that varied in controversy. Then we exposed participants to one of these topics and measured how likely they would be to discuss it.

## Methods

**Pretest.** To generate a set of related conversation topics that varied in controversy, we first chose one broad conversation topic (i.e., women's rights) and then listed a variety of relevant subtopics (e.g., right to abortion and right to own

**FIGURE 2**  
RELATIONSHIP BETWEEN CONTROVERSY AND CONVERSATION AS A FUNCTION OF BELIEF IN CONVERSATION (STUDY 2A)



property). Pretest participants ( $N = 21$ ) rated how controversial these subtopics were (1 = not at all, 7 = very). A repeated-measures ANOVA yielded three suitable subtopics: women's right to own property (low controversy,  $M = 1.29$ ), women's right to equal pay (moderate controversy,  $M = 3.52$ ), and women's right to abortion (high controversy,  $M = 6.38$ ;  $F(2, 18) = 225.57, p < .01$ ; all pairwise comparisons significant at  $p < .01$ ).

**Main Study.** One hundred and twenty participants from an online pool completed the study. To keep the conversation context similar to that of our field study, participants were asked to imagine having an anonymous online conversation with a group of strangers. Participants were randomly assigned one of the three pretested subtopics (low, moderate, or high controversy) and were asked how likely they would be to talk about it (1 = not at all likely, 7 = very likely) in the situation described.

## Results

There was a significant effect of controversy ( $F(2, 117) = 3.35, p < .05$ ; see fig. 3). Consistent with the findings of our field study, a moderate level of controversy increased the likelihood of discussion ( $M_{\text{moderate}} = 4.44$  vs.  $M_{\text{low}} = 3.34$ ;  $F(1, 117) = 14.86, p < .05$ ), but additional controversy hurt the likelihood of discussion ( $M_{\text{high}} = 3.29$  vs.  $M_{\text{moderate}} = 4.44$ ;  $F(1, 117) = 5.12, p < .01$ ). There was no difference in the likelihood of discussion between the low- and high-controversy topics ( $F < 1$ ).

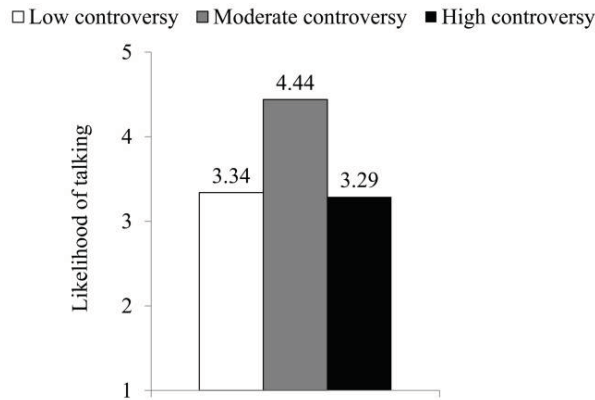
## Studies 2A and 2B Discussion

Replicating the results of the field study, studies 2A and 2B further illustrate that controversy does not always boost the likelihood of conversation. While a moderate amount of controversy increased the likelihood of conversation, ad-

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FIGURE 3

## EFFECTS OF CONTROVERSY ON LIKELIHOOD OF CONVERSATION (STUDY 2B)



ditional controversy decreased the likelihood of conversation. Showing these effects using real interactions, as well as with both pretested and participant-selected topics, speaks to their generalizability.

Ancillary data further underscore the notion that arousal is not driving these effects. Participants in study 2B also rated the topic they were assigned (low, moderate, or high in controversy) on arousal using measures from Berger (2011) and Berger and Milkman (2012). There was no effect of controversy on arousal ( $F < 1, p > .30$ ). This underscores the ancillary results of study 1 and casts strong doubt on the notion that arousal is driving our effects.

### STUDY 3: THE MODERATING ROLE OF ANONYMITY

Study 3 tests the underlying processes behind the observed effects. We have suggested that controversy drives conversation via two distinct, countervailing routes. Controversial topics are more interesting (which should increase likelihood of discussion) but can also be uncomfortable to talk about (which should decrease the likelihood of discussion). Thus, we measure each of these variables to test whether the overall effect of controversy on the likelihood of discussion is driven by the confluence of these two opposing mechanisms.

We further test these underlying processes by examining the moderating role of anonymity. While online platforms like Topix allow anonymous posts, many websites (e.g., the *Wall Street Journal* website) are increasingly requiring identity disclosure. We suggest that the impact of anonymity will depend on how it affects the hypothesized underlying processes. As discussed, while anonymity should have little effect on how interesting a topic seems, it should decrease the role of discomfort as a driver of conversation.

## Methods

One hundred and forty-six participants from an online pool were randomly assigned to a condition in a 2 (anonymity: anonymous vs. identity disclosed)  $\times$  3 (controversy: low vs. moderate vs. high) between-subjects design. Similar to study 2A, participants were asked to list a broad topic and then three subtopics that vary in controversy. They were then asked to imagine having an online conversation with strangers. The only difference between conditions was anonymity. In the anonymous condition, participants were told that they were chatting using untraceable nicknames and that no personal information was available. In the identity-disclosed condition, participants were told that they were chatting using real names and that others could find out personal information about them. In both conditions, participants were randomly assigned one of the three subtopics they listed previously (low, moderate, or high controversy) and were asked how likely they would be to talk about it (1 = not at all likely, 7 = very likely). To test the hypothesized mechanisms, we asked participants to rate how interesting they found the subtopic (1 = not at all interesting, 7 = very interesting) and how comfortable they would feel talking about it in the condition described (1 = very uncomfortable, 7 = very comfortable, reverse coded as discomfort).

## Results

**Likelihood of Discussion.** A 2 (anonymity)  $\times$  3 (controversy) between-subjects ANOVA reveals a anonymity  $\times$  controversy interaction ( $F(2, 140) = 3.14, p < .05$ , see fig. 4).

Consistent with the first three studies, when behavior was anonymous, controversy had an inverted-U impact on likelihood of discussion ( $F(2, 140) = 4.47, p = .01$ ). Moving from low to moderate levels of controversy increased the likelihood of discussion ( $M_{\text{low}} = 4.24$  vs.  $M_{\text{moderate}} = 5.61$ ;  $F(1, 140) = 5.87, p < .05$ ). Beyond that point, however, additional controversy decreased likelihood of discussion ( $M_{\text{moderate}} = 5.61$  vs.  $M_{\text{high}} = 4.04$ ;  $F(1, 140) = 7.56, p < .01$ ). There was no difference between the low- and high-controversy conditions ( $F < 1$ ).

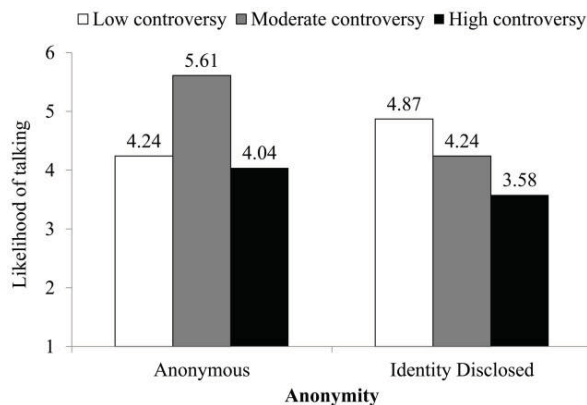
When identity was disclosed, however, controversy decreased the likelihood of discussion ( $F(2, 140) = 2.68, p = .07$ ). While the differences between low- and moderate- ( $M_{\text{low}} = 4.87$  vs.  $M_{\text{moderate}} = 4.24$ ;  $F(1, 140) = 1.1, p > .10$ ) and moderate- and high-controversy topics ( $M_{\text{moderate}} = 4.24$  vs.  $M_{\text{high}} = 3.58$ ;  $F(1, 140) = 1.47, p > .23$ ) are not significant by themselves, there was a linear trend: people were significantly less likely to talk about high-controversy topics than low-controversy ones ( $M_{\text{high}} = 3.58$  vs.  $M_{\text{low}} = 4.87$ ;  $F(1, 140) = 5.35, p < .05$ ).

**Underlying Processes.** To examine whether interest and discomfort are driving our results and whether anonymity moderates the mediating role of discomfort, we performed two different sets of mediation analyses. We used biased-corrected bootstrapping ( $n = 5,000$ ; see Briggs 2006; Preacher and Hayes 2008) to generate 95% confidence intervals around these

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FIGURE 4

EFFECT OF CONTROVERSY AND ANONYMITY ON CONVERSATION (STUDY 3)



indirect effects (interest and discomfort), where successful mediation occurs if the confidence interval does not include zero (Hayes 2009; Preacher, Rucker, and Hayes 2007).

First, we performed separate mediation analyses for the anonymous and identity-disclosed conditions, simultaneously testing interest and discomfort as mediators. For both conditions, the effect of controversy on the likelihood of discussion via interesting is significant and positive (anonymous: 95% CIs: .01 to .57; identity disclosed: 95% CIs: .03 to .44). Discomfort, however, more strongly mediates the controversy-conversation relationship in the disclosure condition (identity disclosed: 95% CIs:  $-1.03$ , to  $-.28$ ; anonymous: 95% CIs:  $-.53$  to  $.03$ ; see fig. 5 for path coefficients). Supporting hypotheses 1 and 2, respectively, these results show that interest and discomfort mediate the controversy-conversation relationship and that discomfort acts as a weaker driver of conversation when people are anonymous.

Second, a moderated mediation (Preacher et al. 2007) over discomfort, with anonymity as moderator, yields similar results. Further, supporting hypothesis 2, anonymity and discomfort interact to affect conversation (anonymity coding: 0 = anonymous, 1 = identity disclosed;  $\beta = -.38$ ,  $SE = .16$ ,  $t(139) = 2.41$ ,  $p < .05$ ). Conditional indirect effects show that discomfort matters more in the identity-disclosed condition (95% CIs:  $-1.08$  to  $-.31$ ) than in the anonymous condition (95% CIs:  $-.54$  to  $.01$ ). Again, the role of discomfort is weaker under anonymity.

Finally, further illustration of how interest and discomfort combine to drive conversation can be seen by looking at their relative values across different anonymity and controversy conditions (fig. 6). For both conditions, controversy increases interest (fig. 6A). When there is identity disclosure, this increase in interest is dominated by increases in discomfort (2.22 to 3.40 to 4.04; see fig. 6B, dotted line). As

a result, we see a net negative relationship between controversy and likelihood of talking. In the anonymous condition, however, discomfort does not increase until the topic is highly controversial (2.68 to 2.43 to 3.67; see fig. 6B, solid line). As a result, we see an inverted-U relationship because discomfort does not counteract the positive effect of interest until the topic is highly controversial. These results underscore our suggestion that anonymity affects the controversy-discussion relationship by affecting the underlying process of discomfort but not interest.

## Discussion

Study 3 extends the findings of the first two studies to provide deeper insight into the processes behind, and moderators of, the observed effects. First, reinforcing the findings of studies 1 and 2, we find that in anonymous online setting, controversy has a curvilinear impact on likelihood of conversation. Controversy increases the likelihood of conversation up until a moderate level of controversy, after which point additional controversy decreases conversation. Second, we demonstrate that two opposing underlying mechanisms, interest and discomfort, drive the effect of controversy on the likelihood of discussion. Further, we demonstrate that anonymity moderates the controversy-conversation link through affecting these underlying processes. When people do not have to reveal their identity, moderate controversy increases conversation because it increases interest without increasing discomfort. When people have to reveal identity however, controversy fails to increase, and actually decreases, conversation because it makes people feel uncomfortable.

The results also cast doubt on alternative explanations. One could argue that our results are somehow driven by knowledge or topic importance, but these explanations cannot explain why anonymity would moderate the effects. How much people know about topics and how important they find topics to be should not change as a function of identity disclosure and so these explanations alone cannot explain the interactive pattern of results.

## STUDY 4: THE MODERATING ROLE OF RELATIONSHIP CLOSENESS

Study 4 further tests the underlying processes behind these effects by investigating the moderating role of relationship closeness. Given that relationship closeness only matters when there is identity disclosure, study 4 uses a face-to-face setting where disclosure is inevitable. We also examine the context of offline communication to examine the generalizability of our results.

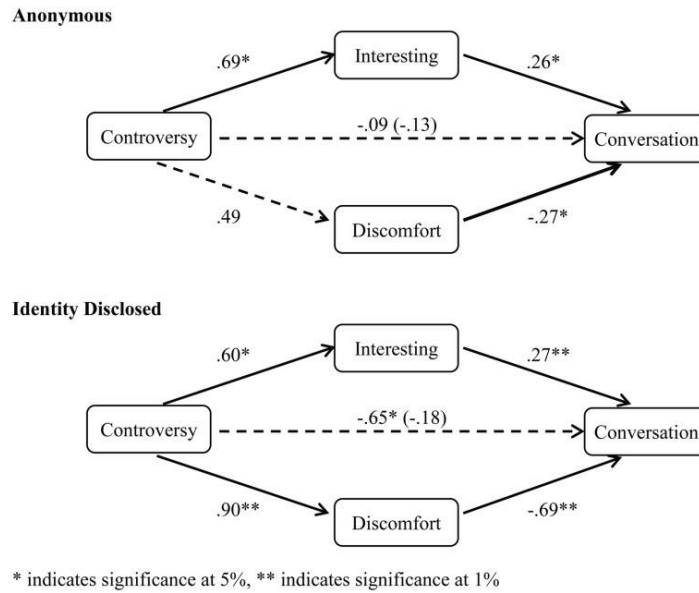
As discussed previously, discomfort should play less of a role in driving controversy's impact on conversation when social acceptance concerns are reduced. Consequently, discomfort should play less of a role when talking with friends than when talking with strangers.

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FIGURE 5

MEDIATING ROLES OF INTEREST AND DISCOMFORT AS A FUNCTION OF ANONYMITY



Methods

Forty-nine participants from an online pool completed the study. Again, we first asked the participants to list a general topic and then three subtopics that varied in levels of controversy (low, moderate, and high). Next, we manipulated relationship closeness. We randomly assigned participants to imagine having a face-to-face conversation with either a friend (close relationship) or a stranger (distant relationship). Then participants rated the likelihood of discussing each of the three subtopics (presented in random order), how inter-

esting they found each subtopic to be, and how comfortable they would feel talking about each subtopic (using the measures from study 3).

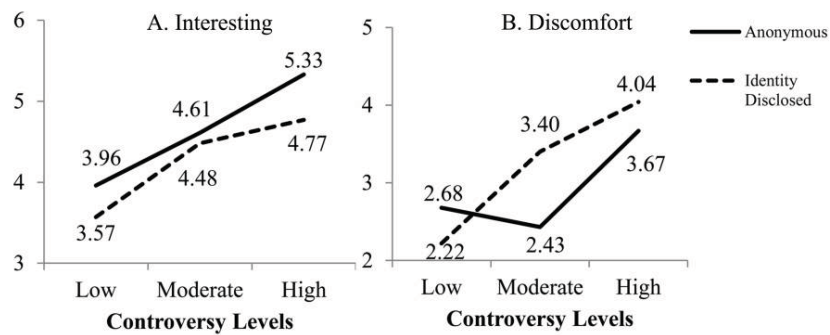
Results

*Likelihood of Discussion.* A 3 (controversy) × 2 (relationship closeness) mixed linear model revealed a significant controversy × relationship closeness interaction ( $F(2, 94) = 3.48, p = .04$ ; see fig. 7).

When talking to friends, controversy increases likelihood

FIGURE 6

INTERESTING (A) AND DISCOMFORT (B) AS A FUNCTION OF CONTROVERSY AND ANONYMITY (STUDY 3)



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of discussion ( $F(2, 94) = 4.94, p < .01$ ). A move from low to moderate levels of controversy significantly increases conversation likelihood ( $M_{\text{low}} = 3.65$  vs.  $M_{\text{moderate}} = 4.81$ ;  $F(1, 94) = 6.21, p < .03$ ). Further increases in controversy did not yield any additional positive effect ( $M_{\text{moderate}} = 4.81$  vs.  $M_{\text{high}} = 5.00$ ;  $F < 1$ ).

When talking to strangers, however, there was no direct effect of controversy on conversation ( $F(2, 94) = .22, p = .80$ ). People reported being equally likely to talk about low, moderate, and highly controversial topics ( $M_{\text{low}} = 3.78$ ,  $M_{\text{moderate}} = 3.52$ , vs.  $M_{\text{high}} = 3.48$ ; all pairwise comparisons insignificant at  $p > .50$ ).

**Underlying Processes.** Once again we simultaneously test interesting and discomfort as indirect effects using biased-corrected bootstrapping ( $n = 5,000$ , 95% confidence interval).

First, we performed separate mediation analyses for the friend and stranger conditions. For both conditions, the effect of controversy on likelihood of discussion via interest is significant and positive (stranger: 95% CIs: .02 to .44; friend: 95% CIs: .32 to 1.21). The mediating effect of discomfort, however, is stronger in the stranger condition (stranger: 95% CIs:  $-.99$  to  $-.21$ ; friend: 95% CIs:  $-.12$  to  $.02$ ; see fig. 8 for path coefficients). Supporting hypothesis 3, this shows that discomfort becomes a weaker driver of conversation as relationship closeness increases.

A moderated mediation (Preacher et al. 2007) over discomfort, with relationship closeness as moderator, shows similar results. Specifically, we find that relationship closeness and discomfort interact to affect the likelihood of discussion (closeness coding: 0 = stranger, 1 = friend;  $\beta = .45$ ,  $SE = .16$ ,  $t(138) = -2.79, p < .01$ ). Conditional indirect effects show that discomfort matters in the stranger condition (95% CIs:  $-1.02$  to  $-.21$ ) but not in the friend

condition (95% CIs:  $-.30$  to  $.04$ ). This provides further evidence that discomfort matters less when people are making decisions about talking with friends rather than strangers.

Finally, further illustration of how interest and discomfort combine to drive conversation can be seen by looking at their relative values across conditions (fig. 9). Similar to study 3, interest increases with controversy in both conditions (fig. 9A). When talking to strangers, controversy increases discomfort monotonically (2.48 to 4.17 to 4.39; see fig. 9B, solid line) and thus cancels out the positive effect of interest. When talking to friends, discomfort does not increase much, even as topics become highly controversial (see fig. 9B, dotted line). As a result, the net effect of controversy on conversation is positive. These results underscore our suggestion that relationship closeness affects the controversy-discussion relationship by affecting the underlying role of discomfort.

## Discussion

Study 4 provides further evidence for our conceptualization. First, as shown in the prior studies, high controversy does not increase buzz. Second, the relationship between controversy and the likelihood of conversation can again be understood in light of interest and discomfort. Further, relationship closeness moderates these effects through its impact on discomfort. When one is talking to friends, the effect of controversy on the likelihood of conversation is driven primarily by interest, with discomfort yielding little effect. Consequently, moderate and high levels of controversy increase the likelihood of conversation. When one is talking to strangers, however, the positive effect of controversy on likelihood of conversation via interest is canceled out by controversy's negative effect via discomfort. Consequently, even moderate levels of controversy fail to increase the likelihood of conversation.

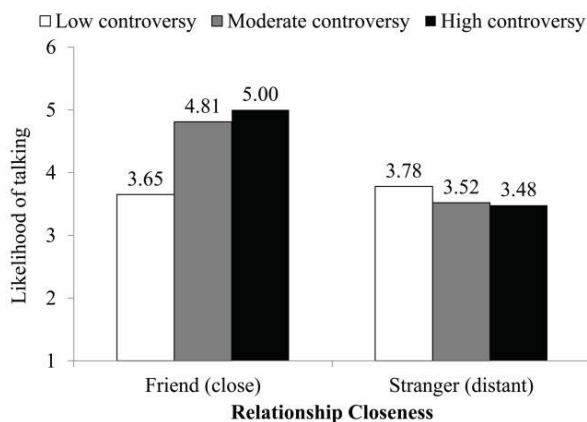
**Additional Studies.** One could argue that people are more willing to talk about highly controversial topics with friends (than strangers) because they assume that their friends are more likely to agree with them and will thus reinforce their opinions. For this to drive our results there would need to be a controversy  $\times$  relationship closeness interaction on perceived agreement, where controversy and agreement would be more positively related in the friend condition than in the stranger condition.

This was not the case. In an ancillary study, we asked participants ( $N = 126$ ) to list three subtopics that vary in controversy (using the same procedures as in studies 3 and 4) and then rate the extent to which either a friend or a stranger would agree with their position on each topic (1 = would not agree at all, 7 = would completely agree). Results show that there was no controversy  $\times$  relationship closeness interaction on agreement ( $F(2, 120) = .93, p > .30$ ).

In another ancillary study, we directly manipulated agreement. We told everyone that they would be talking with their friends but manipulated whether their friends agreed

FIGURE 7

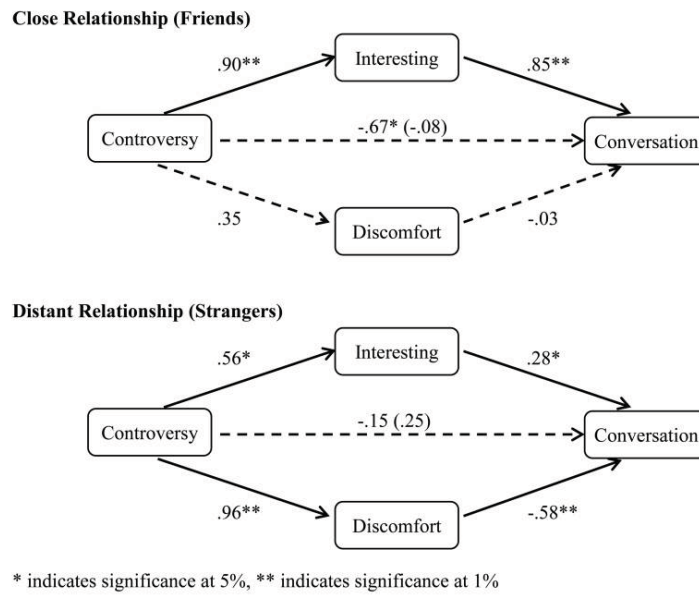
### EFFECT OF CONTROVERSY AND RELATIONSHIP CLOSURE ON CONVERSATION (STUDY 4)



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FIGURE 8

MEDIATING ROLES OF INTERESTINGNESS AND DISCOMFORT AS A FUNCTION OF RELATIONSHIP CLOSENESS (STUDY 4)



or disagreed with them and then measured the likelihood of discussion for low-, middle-, and high-controversy topics. If agreement is driving the effects in the friend condition in study 4, then we should replicate our observed effect when people believe their friends agree with them but not when they believe their friends disagree. This was also not the case. There was no agreement  $\times$  controversy interaction ( $F < 1.7, p > .2$ ). The main effect of controversy replicates the results of the friend condition in study 4 ( $F(2, 40) = 8.42, p < .01$ ) where moderate controversy increases conversation ( $M_{\text{moderate}} = 5.02$  vs.  $M_{\text{low}} = 3.77; F(1, 49) = 9.14, p <$

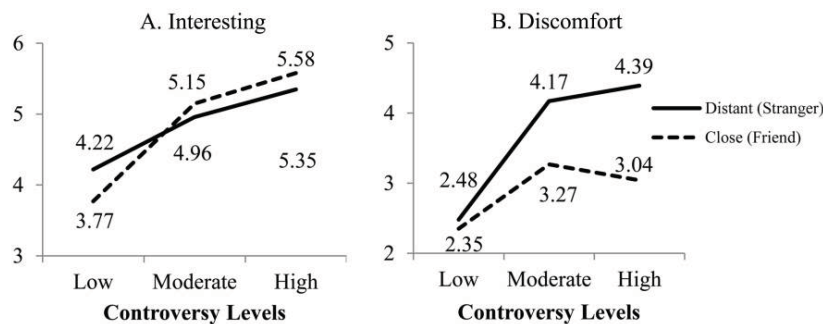
.01) but additional controversy does not further increase conversation ( $M_{\text{high}} = 4.98$  vs.  $M_{\text{moderate}} = 5.02; F < 1$ ). In sum, there is little evidence that agreement drives our results in the friend condition.

GENERAL DISCUSSION

Word of mouth has a huge impact on consumer behavior. But less is known about why people talk about some topics more than others. Marketers and consumers believe that controversy increases buzz, for example, but is this actually

FIGURE 9

INTERESTING (A) AND DISCOMFORT (B) AS A FUNCTION OF CONTROVERSY AND RELATIONSHIP CLOSENESS (STUDY 4)



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the case? A combination of field data and laboratory experiments support our framework and cast doubt on the assumption that controversy always boosts buzz. Data from an online news site (study 1), as well as lab experiments (studies 2A and 2B), show that while moderate controversy increases the likelihood of discussion, additional increases in controversy do not provide any additional boost. Additional experiments (studies 3 and 4) generalize these findings to a broad range of circumstances (e.g., talking to friends or strangers and anonymously or not). Across all studies, highly controversial things were never significantly more likely to be discussed than moderately controversial ones, and in some cases, even moderate levels of controversy were enough to reduce the likelihood of discussion.

Our results also demonstrate the underlying mechanisms behind these effects. Controversial issues are often more interesting, which makes people more likely to talk about them. At the same time, however, controversy can decrease conversation by increasing discomfort. Consequently, how controversy affects people's decisions to talk depends on the confluence of these two factors. Further, we show that contextual factors such as anonymity and who people are talking to (i.e., friends or strangers) moderate the controversy-conversation link through affecting these component processes (studies 3 and 4). When social acceptance is less of a concern (e.g., when people are communicating anonymously, study 3) or people are less threatened by the discussion of controversial topics (e.g., when communicating with friends, study 4), the mediating impact of discomfort is reduced. Here, the controversy-conversation relationship tends to be more positive because it is driven primarily by interest.

### Theoretical Contributions

This research makes several contributions. First, it provides the first empirical analysis of how controversy affects word of mouth and is one of the first studies to look at controversy in marketing. While consumers and managers hold lay beliefs about controversy, little conceptual or empirical work has actually examined its affects.

Second, while we examined the effects of contextual factors (i.e., anonymity and relationship closeness) to test our framework, we also provide insight into how these factors shape word of mouth more broadly. Some research has begun to look at how different content factors (e.g., interest or public visibility) influence word of mouth, but less is known about when different drivers of word of mouth matter more. This work sheds light on how anonymity and relationship closeness affects what people share, and we suggest that this is a fruitful area for further research.

Finally, our research deepens understanding around how complex word-of-mouth drivers (e.g., controversy) drive conversation. We show that the effects of controversy can be broken down into interest and discomfort, and other complex word-of-mouth drivers (e.g., brand loyalty) may also be understood via combinations of more basic processes (e.g., arousal, interest, or mood). Future work might examine

not only whether certain drivers shape word of mouth but also how various basic drivers combine to shape discussion.

### Future Research

A number of questions deserve future exploration. First, it would be helpful to understand how other person- and situation-specific variables moderate the effects of controversy on conversation. Although self-relevance, general involvement, or how much people care or feel passionate about a topic all might boost word of mouth in general, they might also moderate the impact of controversy on conversation by reducing the negative effects of discomfort. Animal lovers, for example, might be more willing to endure the discomfort of talking about highly controversial topics (e.g., animal testing) because they care so much about the topic.

Broader contextual factors (e.g., norms within social milieu) may also moderate these effects. Controversial topics may be embraced in scientific communities, for example, due to scientists' desire for scientific truth. The response should be less positive in hostile environments (e.g., being a liberal in a conservative crowd), however, where individuals are especially concerned about how others may respond. Likewise, people may be hesitant to talk about controversial issues when it is difficult to express their entire viewpoint (e.g., Twitter's 140 character limit).

Research might also examine how expectations about future interactions moderate these effects. One possibility is that discomfort is weaker when there is no expectation of future interaction and thus the likelihood of discussion goes up with controversy. The same might be true for the expectation of a response. One could argue that controversy might increase posting more when people are not expecting others to reply since the belief that there will not be negative feedback might encourage people to talk about controversial topics. However, the opposite could also occur. Since there is no feedback mechanism, there is no way for the speaker to make sure that her message has been correctly interpreted. Consequently, people might avoid talking about controversies to avoid the miscommunication of identity.

Future work could also examine how controversy affects conversation length or the content of conversations. One might imagine that controversial topics might be less likely to be brought up, but once people start talking about them, the disagreement will sustain a longer conversation. One could also argue that while controversy can generate discussion, much of the word of mouth is negative rather than positive. Content analysis of study 2A, however, is inconsistent with this notion. We used Linguistic Inquiry and Word Count (LIWC; Pennebaker, Francis, and Booth 2001) to measure people's usage of positive and negative emotional words. There was no effect of controversy on the number of positive ( $F(2, 160) = 1.45, p = .24$ ) or negative emotion words ( $F(2, 160) = .69, p = .50$ ) that people used. That said, it did appear that people avoided addressing conversation partners directly when discussing moderately and highly controversial topics, as marked by a lower usage of second-person pronouns ("you," "your," etc.;  $M_{\text{low}} = .71$ ,

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$M_{\text{moderate}} = .31$ ,  $M_{\text{high}} = .27$ ;  $F(2, 160) = 2.10$ ,  $p = .13$ ;  $M_{\text{low}} = .71$  vs.  $M_{\text{moderate}} = .31$ ,  $p = .07$ ;  $M_{\text{low}} = .71$  vs.  $M_{\text{high}} = .27$ ,  $p = .06$ ). This may indicate that people actively try to prevent arguments that would otherwise arise from talking about moderately and highly controversial topics by changing communication style.

## Implications

These findings have important implications for managing and leveraging controversy. First, while controversy is not always predictable, the fact that there is strong agreement across people about which topics are more controversial than others (studies 1 and 2B) suggests that companies and organizations can easily get some sense of how controversial a given campaign will be. For example, People for the Ethical Treatment of Animals (PETA) could easily have identified that its “Holocaust on Your Plate” campaign (CNN 2003) would be more controversial than its “I’d Rather Go Naked Than Wear Fur” campaign.

Second, while negative attention can sometimes boost sales (Berger, Sorensen, and Rasmussen 2010), our research suggests that if the goal is to generate word of mouth, marketers and politicians should avoid evoking more than a moderate level of controversy. Across our studies, we show that controversy has an inverted-U relationship with conversation at best. In certain circumstances, controversy decreases word of mouth monotonically.

Finally, the results show how a campaign’s controversy level can be optimized based on the desired word-of-mouth channel and audience. To encourage online discussion, for example, marketers may want to encourage moderate controversy because people are more comfortable discussing controversial things when they are anonymous. When trying to encourage word of mouth to weaker ties, less controversial campaigns may be more effective.

In conclusion, controversy increases the likelihood of discussion but only in moderate amounts. Its impact is driven by opposing processes of interest and discomfort, which are shaped by contextual factors. By looking at these effects in both the field and the lab, the current article provides the first look into when, why, and how controversy causes conversation.

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