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RESEARCH ARTICLE





Discussing proximal pasts and far futures

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Abstract

Consumers often share word of mouth, and such interpersonal communication shapes attitudes and purchases. But while some research has examined what consumers talk about, there has been less attention to *when* consumers discuss. How does the distance from now (i.e., whether something is temporally near or far away) shape the likelihood of discussion? And might the effect of temporal distance on word of mouth vary based on whether those things happened in the past or will happen in the future? Five studies, including analyses of thousands of social media posts, address these questions. They suggest that consumers tend to talk about temporally near things, but that this is moderated by whether they are talking about the past or future (i.e., consumers talk about more temporally distant things when talking about the future). Accessibility seems to play an important role in these effects. While temporally near things tend to be more accessible, on average, goals and plans are more likely to remain active in the future, which shapes what gets discussed. These findings have implications for understanding drivers of word of mouth, how time shapes consumer behavior, and how companies can more effectively manage interpersonal communication.

KEYWORDS

accessibility, sharing, time, word-of-mouth

INTRODUCTION

Word-of-mouth is both frequent and important. Consumers talk about purchases, chat about experiences, and share news and information. Further, such interpersonal communication shapes what consumers think, buy, and do (Chevalier & Mayzlin, 2006; Herr et al., 1991).

Consistent with its importance, a burgeoning stream of research has begun to look at what gets talked about and why. Researchers have explored why consumers share rumors (Dubois et al., 2011), email articles (Berger & Milkman, 2012), or talk about products or services (Walasek et al., 2018). But beyond what they talk about, *when* consumers talk about also varies. Sometimes consumers talk about the past (e.g., a movie they saw last week), and other times they talk about the future (e.g., a movie they will see next week). Sometimes consumers talk about temporally proximal events (e.g., what they will do for lunch tomorrow), and other times they talk about more distant events (e.g., what they will do for a vacation in 2 months).

How does the temporal distance from now (i.e., whether something is temporally near or far away) shape the likelihood of discussion? And might that vary based on whether those things happened in the past or will happen in the future?

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This manuscript begins to address these questions as it investigates when consumers talk about and why. Specifically, we suggest that temporally near things should be more likely to be discussed because they are more cognitively accessible. Importantly, however, we suggest that temporal distance's impact on sharing should be moderated by whether the past or future is being discussed. While the past follows principles of memory decay, in the future, action planning and goals may lead temporally further things to be more accessible. We argue that these differences in accessibility will lead consumers to talk about temporally further things in the future. Five studies, including analyses of thousands of social media posts, support this conceptualization.

The findings have implications for both understanding drivers of word of mouth and understanding how companies and organizations can encourage discussion. By understanding when consumers are more likely to talk about, for example, companies can better determine the ideal timing of marketing communications both before and after relevant events (e.g., a concert or product being delivered).

WORD-OF-MOUTH

Word of mouth is an integral part of everyday life. Consumers recommend products, complain about services, and discuss experiences. Further, these communications shape everything from attitudes to purchases (for a review, see Babić Rosario et al., 2016).

Recent work has begun to examine what drives word of mouth (see Berger, 2014 for a review). These range from individual sender motivations (e.g., knowledge discrepancy or self-enhancement; Moldovan et al., 2015; Packard & Wooten, 2013) to emotions (Teeny et al., 2020) to audience factors (Buechel & Berger, 2018).

But, while prior work has started to investigate what consumers talk about and why, there has been less attention to *when* consumers talk about. Consumers can talk about a meal they just ate, or one they are eating next week. They can talk about a movie they saw 2 months ago or one they are hoping to see tomorrow. *When* are consumers more likely to talk about, and why?

TEMPORAL DISTANCE AND TALKING

To begin to address this question, we rely on two simple distinctions often used to describe time (D'Argembeau & Van der Linden, 2004; Tulving, 2002). The first is *temporal distance*, or how close something is to now. Someone can talk about a movie they are watching tomorrow, or one they are watching next week, with the former being closer to the present.

The second is *temporal direction*, or whether something happened in the past or will happen in the future. Someone could talk about the shoes they bought yesterday, for example, or ones that they will buy tomorrow.

Our first, more straightforward prediction, is that consumers are more likely to share things that are temporally near or proximal. We suggest this possibility based on cognitive accessibility, or the ease or readiness with which a concept can be retrieved from memory (Higgins, 1989). More accessible concepts are more readily retrieved, due to recent or frequent activation, or the presence of retrieval cues (Bargh et al., 1988; McGeoch, 1932), and accessibility influences a range of judgments and decisions (Higgins, 1989).

Whether something is accessible, or top-of-mind, generally decays with as it gets further from the present. Decades of research on serial position effects, for example, find that final items on lists are more likely to be recalled (Murdock & Anderson, 1975; Postman & Phillips, 1965). Similarly, delays between learning and a memory test decreases performance on recent items (Postman & Phillips, 1965). In both cases, the longer it has been since exposure, the less likely things are to be accessible, and thus the less likely they are to be remembered and chosen.

Building on this, we suggest that consumers should be more likely to discuss things that are temporally near. Something that happened last week should be more top-of-mind than something that happened last month. This heightened accessibility should increase likelihood of discussion. Compared to temporally distant things, things that occurred recently or will occur soon in the future should be more likely to be discussed. Things that are happening right now should also be more likely to be discussed for the same reason.

ASYMMETRIC EFFECTS OF PAST AND FUTURE THROUGH RECENCY AND GOALS

Importantly, however, we suggest that the relationship between temporal distance and sharing should be moderated by temporal direction, or whether consumers are talking about the past or the future. Specifically, we suggest that people should talk about temporally further things when talking about the future.

Future events involve action planning for goals and intentions (D'Argembeau et al., 2011; Kliegel et al., 2000; Marsh et al., 1998). Planning to go to a movie, for example, or contemplating a goal to lose weight, both involve a variety of steps and actions that must occur in advance. Planning to go to a movie involves considering which one to see, finding a theater, and potentially getting a babysitter. Similarly, to achieve a goal to lose weight, one has to think about what and how much to eat, when to exercise, and how to avoid temptations. The necessity of planning suggests that, compared to past things, future-oriented thought may focus on spans of time further from now (Atance & O'Neill, 2001; Atkinson & Birch, 1970; Goschke & Kuhl, 1993). Consistent with this, about three-quarters of future thoughts include planning (Baumeister et al., 2020).

Further, fulfilling goals or plans reduces accessibility (Förster et al., 2005; Marsh et al., 1998; Zeigarnik, 1927). If one has a goal to lose weight, for example, that goal will remain active until fulfillment, but once fulfilled, it is no longer active. Compared to future goals, past goals are more likely to have been fulfilled or may be no longer relevant, meaning they are less likely to remain accessible. Data on internet search behavior is consistent with this suggestion (Masicampo & Ambady, 2014). While searches for goal-related events (e.g., elections) rose slowly prior to the event, they fell quickly after the event occurred. Once the event had passed this information was no longer necessary, and thus it was no longer top of mind. Similarly, a study collecting records of participants' thoughts found that, compared to thoughts about past things, thoughts about future things tended to be further from now (Baumeister et al., 2020).

Taken together, this suggests that how temporal distance shapes sharing should depend on whether consumers are talking about the past or future. Given that future goals and plans are more likely to remain accessible, temporally far things should be more accessible if they are occurring in the future. Consequently, consumers should talk about temporally further things when talking about the future.

THE PRESENT RESEARCH

Five studies test these predictions in the lab and in the field. First, to examine these patterns in the real world, we analyze social media posts. We look at thousands of posts from Facebook (Study 1a) and Twitter (Study 1b), and real face-to-face conversations (Study 1c) to examine the relationship between time and talking. We test whether consumers are more likely to talk about things that are temporally near, and whether this is moderated by whether they are discussing the past or future. Further, we test whether these results hold when considering only traditional word of mouth (i.e., discussion about products or brands).

Second, we use controlled laboratory experiments to test the causal nature of these effects and whether accessibility plays a role. Study 2 examines whether consumers talk about more distant things when talking about the future. Further, it examines whether the temporal distribution of what consumers would share is similar to the temporal distribution of what is accessible. In addition, it measures whether future content is more goal and



plan related than past content. Finally, Study 3 tests the causal role of goals and plans in the past–future asymmetry. All measures, manipulations, and exclusions are reported in the text below; analysis was only conducted upon completion of data.

STUDY 1A: FACEBOOK

To begin to investigate when consumers discuss, we turn to the field. We collect thousands of Facebook status updates, code them based on temporal distance, and examine the temporal distribution of when consumers talk about.

We make two predictions. First, consistent with the notion that accessibility drives sharing, people should be more likely to talk about things that are temporally proximal. What they just bought or will buy soon, for example, rather than what they bought a while ago or will buy in a while. Frequency of discussion should be highest around the present and decay from there.

Second, this temporal decay should be moderated by whether consumers are talking about the past or future. If our theorizing about the role of accessibility is correct, relative to posts about the past, posts about the future should, on average, be more temporally distant.

Method

First, we randomly sampled 3000 Facebook status updates using the myPersonality Facebook application (Kosinski & Stillwell, 2011). This application allows users to take personality tests (i.e., Big Five) and records their status updates. Research assistants removed any status updates which had nothing to do with time (e.g., song lyrics "I'm not cryin cause I feel so sorry for you, I'm cryin for me --Toby Keith," or quotes "~Imagination is more important than knowledge"), leaving 2377 status updates.

Three additional research assistants coded when posters were talking about. Building on Liberman et al. (2007), we used the fractions of a day from now/ ago method. For example, 0 is now (present), -1/24 is an hour ago, 1 is a day from now, and -7 is a week ago. Posts that did not have an interpretable time frame (e.g., "EXCEPTION TO THE RULE!!!!") were labeled N/A. To test agreement, only statuses with at least two numeric codings were retained, leading to N = 2149. There was high agreement (α >0.90), and ratings were averaged into a "time from now" index. To be conservative, only posts coded as 0 across coders are treated as present, but a broader definition of "present" only increases the percentages of posts in that time frame even further. Posts that had a past temporal score, on average, were coded as past, and posts that had a future temporal score, on average, were coded as future.



FIGURE 1 Distribution of temporal distances of Facebook posts (excluding now)

Results

Decay from now

As predicted, people were more likely to talk about temporally near things. 41.1% (n = 883) of posts, for example, focused on right now and 18.9% were within an hour of now. Moving further away from the present, the frequency of discussion decayed even further: only 16.7% of posts were between an hour and 8h away, 13.1% were between 8 and 24 h, 6.8% were between a day and a week, and only 3.4% were over a week.

A more continuous test demonstrates this pattern more rigorously. Figure 1 plots the cumulative distribution of posts, excluding the present (i.e., 0), against raw temporal distance. A majority of posts happen soon after now and a logarithmic function fits the data quite well ($R^2 = 0.90$, $B_1 = 9.28$, SE = 0.09, t = 106.66, p < 0.001). It fits better (higher R^2 and lower RMSE and AIC) compared to linear, quadratic, and cubic functions ($R_s^2 < 0.05$). This indicates that most posts are occurring close to now with relatively few posts existing further away.

Temporal direction

Second, as predicted, the observed temporal decay was moderated by whether people were talking about the past or future. Consistent with our theorizing regarding goals and plans, people talked more about temporally further things in the future.

To minimize the impact of outliers (see Ratcliffe, 1993), we convert the absolute value of the "time from now" distance metric into (1-(1/(1+[distance]))), which is larger as temporal distance increases. For ease of interpretation, we report the metric in terms of hours and days in the text. While posts about the past were, on average, about things within a few hours (M = 5.27 h ago; $M_{index} = 0.18$, SD = 0.22), as expected, posts about the future tended to be further away (M = 12.9 h from now, $M_{index} = 0.35$, SD = 0.32; F[1,



FIGURE 2 Kaplan–Meier analysis between past and future on Facebook (excluding now)

1264] = 110.49, p < 0.001, d = 0.590). To confirm that these results hold for the raw time values, and are not skewed by the transformation, we also use non-parametric tests on the raw hours-from-now values. Results are the same (see Appendix S1). A Kaplan–Meier Mantel– Cox survival analysis finds the same results and helps illustrate the pattern (Figure 2). Compared to posts about the past, future posts had a cumulative survival curve that decayed more slowly (i.e., more posts further from now, $\chi^2 = 86.78$, p < 0.001). Said another way, while only around 8.52% of posts about the past talked about something that happened more than a day ago, over 25.9% of posts about the future talked about things more than a day from now.

Just products and brands

While the results are consistent with our theorizing, one could wonder if they hold when focusing only on posts that mention products and brands. To test this possibility, two independent coders identified whether posts involved products or brands. They reached 89.6% agreement, and an independent lab manager adjudicated disagreements.

Results remained the same. Compared to posts about the past ($M_{\text{Past}} = 0.16$ [SD 0.21]), posts about the future discussed things that were further away ($M_{\text{Future}} = 0.26$ [SD 0.30], F(1, 235) = 9.07, p = 0.003, d = 0.415).

Discussion

Thousands of Facebook status updates provide preliminary evidence of when people talk about, and how this varies based on whether people are talking about the past or future. First, consumers were more likely to talk about things that are temporally near rather than further away. Second, the relationship between time and talking was moderated by the past versus future. While consumers talking about the past tended to talk about things that were temporally near, consumers talking about the future tended to talk about things that were further away in time. Third, the results hold just considering posts about products or brands, demonstrating that these effects shape word of mouth.

STUDY 1B: TWITTER

The results of Study 1a are supportive, but to test their generalizability, we examine whether the same patterns hold on Twitter. We examine thousands of posts and predict that while temporally near events should be more likely to be discussed, this will again be moderated by whether consumers are talking about the past or future.

Method

Study 1b uses a similar method as Study 1a. First, we sampled 2701 tweets using the Twitter API Firehose. Research assistants found 567 tweets did not include temporal information, and thus could not be analyzed.

Next, three additional research assistants coded when posters were talking about. As in Study 1a, only tweets with at least two numeric codings were included in the analyses, which led to N = 1663.¹

Results

Decay from now

First, as predicted, and consistent with Study 1a, people tended to discuss things that were temporally near. People were most likely to discuss the present (45.7%, n = 760) and of the remaining posts, almost a quarter talked about something happening within an hour. Frequency of discussion decayed even further as temporal distance increased: only 12.3% of posts were between an hour and 8h away, and 10.0% were between 8 and 24 h. Further, 4.4% were between a day and a week and only 3.2% were over a week away.

Plotting the cumulative distribution of temporal distances, excluding now, shows a continuous and rapid decline (Figure 3). A logarithmic function fit the data well $(R^2 = 0.90, B_1 = 87.84, SE = 0.99, t = 88.55, p < 0.001)$ and fit better (higher R^2 , lower AIC and RMSE) compared to linear, quadratic, and cubic functions ($R_s^2 < 0.08$). This indicates that most of the posts are occurring temporally close to now with relatively few posts existing further away.



FIGURE 3 Distribution of temporal distances on Twitter (excluding now)

Temporal direction

As predicted, and consistent with Study 1a, temporal decay was moderated by whether people were discussing the past or future. While posts about the past were a little under 6h ago (M = 5.63 h; $M_{index} = 0.20$, SD = 0.28), on average, consistent with our theorizing regarding goals and plans, posts about the future were further from now (M = 8.43 h away, $M_{index} = 0.26$, SD = 0.30; F[1, 901] = 12.48, p < 0.001, d = 0.235). A Kaplan–Meier survival analysis finds the same results ($\chi^2 = 6.72$, p = 0.01; Figure 4). While only around 10% of posts about the past talked about something that happened more than a day ago, over 25% of posts about the future talked about such things.

Just products and brands

As in Study 1a, the results held when only considering brand or product-related tweets. That is, relative to tweets about the past ($M_{\text{Past}} = 0.19$ [SD 0.29]), tweets about the future were about temporally further topics ($M_{\text{Future}} = 0.30$ [SD 0.31]; F(1, 149) = 4.86, p = 0.029, d = 0.359).

Discussion

Analysis of thousands of tweets provides further evidence of when consumers talk about, and how this varies based on whether they are talking about the past or future. First, consistent with Study 1a, results again indicate that consumers are more likely to talk about temporally near things. Second, as in Study 1a, the decay between time and talking was moderated by past versus future, with future things being further from now. Third, as in Study 1a, results hold just considering posts about products or brands, again illustrating that effects shape word of mouth.

¹One might wonder whether a different coding scheme in these studies would yield convergent results. Using Pennebaker et al.'s (2015) LIWC coding, we similarly find that past posts had the most past-related words, present posts had the most present-related words, and future posts had the most future-related words.

STUDY 1C: FACE-TO-FACECONVERSATIONS

While the results of the first two studies are supportive, one might wonder whether the findings are somehow restricted to social media. Maybe social media platforms encourage posting about things happening now, and that drove the prevalence of temporally near things.

Note that this cannot explain why the decay between time and talking was moderated by past versus future, but to further test generalizability, Study 1c examines synchronous face-to-face conversations. People talked about anything they wanted, and we coded temporal distances discussed. We again predict a concentration of discussion around temporally near events, and that consumers would bring up temporally nearer events in the past than in the future.

Method

As part of a larger set of studies, 63 pairs of people (N = 126) who knew one another participated in a study on conversations. All conversations were held in Fall 2019 in an east-coast behavioral laboratory.

After reading some instructions, participants had a normal conversation about whatever they wanted. Each conversation lasted approximately 10min. The conversations were recorded and transcribed, with breaks between each conversational turn (i.e., an individual speaking continuously within the context of a back-and-forth conversation). We removed any turns about the study itself (e.g., "are we supposed to start talking now) and the remaining dataset included 7680 conversational turns. For each turn, pairs of coders (agreement rs > 0.49) noted temporal distance using the same coding approach as the first two studies.

Results

Decay from now

People were again more likely to converse about temporally near things. 42.4% of all conversational turns, for example, focused on right now and 27.5% were between now and a day away. 9.2% of the remaining turns were about things between a day and a week from now and only 20.9% of the turns were about distances further than a week away.

Temporal direction

Second, as predicted, the temporal decay was moderated by whether people were conversing about the past or future. To control for correlated observations within



FIGURE 4 Kaplan–Meier analysis between past and future temporal directions on Twitter (excluding now)

each conversation, the data was analyzed with random intercepts for each conversation. Relative to conversational turns about the past (M = 1.36 days), conversational turns about the future are temporally further away from now (M = 1.58 days; F[1, 4362] = 14.04, p < 0.001).

Discussion

Study 1c shows that the results hold beyond social media. Even in synchronous, face-to-face conversations, consistent with the first two studies, consumers were more likely to talk about temporally near events. Further, while consumers conversing about the past tended to bring up temporally nearer events, consumers conversing about the future tended to bring up temporally further events.

INTERNAL ANALYSIS: EXPLORING GOALS AND PLANS

While results of the first three studies are consistent with our theorizing, one could wonder whether goals and plans are actually driving the temporal asymmetry. That is, relative to the past, is the heightened necessity of planning for the distant future driving the proportion of distant future thoughts up?

While Study 2 and 3 test this more directly, to begin to test this possibility, independent raters coded a random sample of posts (N = 1567) from Study 1a and Study 1b based on whether the person was "discussing a goal they had (and have achieved) or have or a plan they executed or are making" (e.g., "I mite go to support Kelly Parker In The Race For Life AnyOne Want To Join Me?? Xx"). There was strong agreement (77% or higher) across raters and disagreements were resolved by the first author.

Consistent with our goal-based explanation, there was a higher percentage of goal/plan-related posts in the

future than past (Study 1a: 39.9% vs. 14.2%; $\chi^2(1) = 106.95$, p < 0.001 and Study 1b: 20% vs. 0.7%; $\chi^2(1) = 30.46$, p < 0.001). This supports the notion that consumers talk about temporally further things in the future because the future is more likely to involve goals and plans (see Appendix S1 for other coding).

STUDY 2: THE ROLE OF ACCESSIBILITY

Study 2 has six goals. First, it tests our theorizing in a more controlled setting. Some participants were asked to write about something they would share. We expect the temporal pattern to mirror that of the first three studies. Consumers should be more likely to share things that are near, rather than far from now, and this should be moderated by whether consumers are talking about the past versus future.

Second, the study further examines consumer relevance. Some participants were specifically asked to write about a purchase, and we examine whether the effects hold in this condition.

Third, it begins to explore whether an accessibilitybased mechanism can explain the results. While participants in a Sharing condition were asked to write about something they would share, participants in a Thoughts condition were simple asked to write about whatever was top-of-mind. If accessibility is sufficient to explain the results, the pattern of results in the Thoughts and Sharing conditions should look similar.

Fourth, Study 2 begins to test the role of goals in the past-future asymmetry. Participants rated the extent to which they wrote about goals or plans, and we predict that future content will be more goal or plan-relevant.

Fifth, Study 2 explores individual differences potentially related to thinking about the past or future, goals, or temporally near or far events. Optimism or emotional intelligence may involve more consideration of further future outcomes (Scheier et al., 1994; Schutte et al., 1998), for example, abstract thinking may involve thinking of more distal events (see Vallecher & Wegner, 1989), and being a planner may be associated with considering more temporally distant events (Ludwig et al., 2019). Alternatively, older individuals may differ in what content they think about relative to younger individuals (Carstensen et al., 2003). We examine the relationship between these aspects and the observed effects.

Finally, Study 2 tests an alternative explanation. One could argue that the Studies 1a-1c results were somehow an artifact of having temporal distance coded by outside raters (i.e., research assistants). While it is not clear how such an explanation could explain the pattern of results, to rule out this concern, Study 2 has participants rate temporal distance themselves.

Method

One thousand seven hundred and ninety-nine (of eighteen hundred recruited) Prolific participants were randomly assigned to one of three between-subjects conditions (Thoughts, Sharing, or Consumption). Following preregistration https://aspredicted. org/7YF_1KR, participants who identified that they did not take the study seriously (n = 23), and those who indicated they did not write about something with a temporal distance ("There is no specific time associated with this," n = 283), were removed. Similarly, an independent research assistant removed any past or future entries that had unreasonable temporal distances (e.g., mentioning an event yesterday then rating it as 60 days ago), miscoding a past event as future or viceversa, or writing about the task of writing. This led to a final sample of 1336 (average age 39.56, 57.19% female). The pattern of results remains similar with those entries included.

The only difference between conditions was the title of the study and the instructions regarding what to write about. In the Thoughts condition, the study was titled "Thoughts Study," and participants were asked to write at least 150 characters about whatever came to mind. In the Sharing condition, the study was titled "Sharing Study" and participants were asked to write at least 150 characters about something they would share with a friend. In the Consumption condition, instructions were identical to the Sharing condition but with the added caveat to write about a purchase. Instructions for each condition are included in the Appendix S1.

All participants then completed the dependent variable, rating whether they wrote about something in the Past ("Mostly or only happened in the past, or past and present") or Future ("Mostly or only will happen in the future, or future and present"), and how far away the thing was from now (i.e., indicating how many hours and days ago or from now it was). Participants were instructed to type in 0 if their event was right now ("If it is happening only right now (as in, only in this moment), please enter 0 for all fields."). We transformed the temporal distance measure to the metric from Study 1a (i.e., 1 - (1/[1+distance])) to compare topics about the past and future. Larger numbers indicate further from now.

To test the role of goals and consumer relevance, participants also indicated (1) the extent to which what they wrote about was about a goal or plan (1 = Not at all, 7 = Very), and (2) whether what they wrote about involved something they purchased (or will purchase), bought (or will buy), or otherwise consumed (or will consume). Consistent with the manipulation, the proportion of purchases was highest in the Consumption Condition (77.87%; 39.77% in Thoughts, 39.56% in Sharing). To assess exploratory individual differences, SCP

participants completed the temporal orientation subscale of the Planfulness Scale (Ludwig et al., 2019), optimism via LOT-R (Scheier et al., 1994), a measure of emotional intelligence (Schutte et al., 1998), and a 10item adaptation of the behavioral identification form to assess abstract thinking for construal level (Slepian et al., 2015; Vallecher & Wegner, 1989) in a random order. Participants then completed basic demographics (e.g., age).

Results

Decay from now

First, participants again discussed temporally near things. That is, 38.70% of topics focused on content within a day, and 65.20% of topics focused within a week. Only 17.74% wrote about something between a week and a month away, and the 17.07% of remaining content was over a month away.

Temporal direction

Consistent with Study 1a, 1b, and 1c, the temporal distance was moderated by whether people were talking about the past or future. A 3 (Task: Thoughts, Sharing, Consumption) ×2 (Temporal Direction: Past or Future) on posts about the past or future (N = 1089) revealed a main effect of temporal direction (F[1, 1083] = 44.19, p < 0.001, d = 0.340). Relative to posts about the past (a little over 2 days ago, on average, $M_{\rm Past} = 2.02$ days ago; $M_{\rm index} = 0.67$, SD = 0.33), posts about the future posts were temporally further away ($M_{\rm Future} = 3.44$ days; $M_{\rm index} = 0.78$, SD = 0.28).

Consistent with our accessibility-based explanation, however, there was no interaction (F[2, 1083] = 2.20, p=0.11). Postsabout the future were further away than posts about the past regardless of whether people were writing things they would share with others ($M_{\text{Future}} = 4.21$ days [$M_{\text{index}} = 0.81$, SD = 0.23]; $M_{\text{Past}} = 1.66$ days [$M_{\text{index}} = 0.62$, SD = 0.33]; F[1, 1083] = 33.90, p<0.001, d = 0.638), what was top of mind ($M_{\text{Future}} = 1.72$ days [$M_{\text{index}} = 0.63$, SD = 0.38], $M_{\text{Past}} = 1.18$ days [$M_{\text{index}} = 0.54$, SD = 0.38]; F[1, 1083] = 6.07, p = 0.014, d = 0.238), or things related to consumption ($M_{\text{Future}} = 6.35$ days [$M_{\text{index}} = 0.86$, SD = 0.19]; $M_{\text{Past}} = 3.07$ days [$M_{\text{index}} = 0.75$, SD = 0.27]; F[1, 1083] = 12.28, p<0.001, d = 0.439).

Goals

Consistent with our theorizing, a $3(Task) \times 2(Temporal Direction)$ ANOVA on goal and plan ratings yielded the predicted main effect of temporal direction: future content was more about goals or plans (M = 5.17,

SD = 2.05) than past content (M = 3.46, SD = 2.27; F[1, 1083] = 152.75, p < 0.001, d = 0.779). Finally, exploratorily, among past and future content, the extent to which content was rated as involving goals or plans was positively correlated with the temporal distance (r = 0.134, p < 0.001).

Self-identified purchases

The same pattern holds among participants who selfidentified to have written about purchases. Future content was temporally further than past content (*F*[1, 602] = 23.54, p < 0.001; d = 0.322), and this held in the Share (*F*[1, 602] = 8.15, p = 0.005, d = 0.486), Thoughts (*F*[1, 602] = 5.25, p = 0.022, d = 0.318), and Consumption conditions (*F*[1, 602] = 14.81, p < 0.001, d = 0.507).

Individual differences

We also conducted an exploratory analysis of the individual difference measures. First, we examined if age moderated the asymmetry; that is, whether older or younger individuals differed on speaking about temporally nearer past versus temporally further future events. They did not. While older individuals wrote about slightly closer events in general (B = -0.025, t = -1.75, p = 0.08), this did not differ in the past vs. future (B = -0.007, t = -0.52, p = 0.60). There were also no interactions of temporal distance and direction for optimism, emotional intelligence, planning, or abstract thinking (all ts < 1.32, ps > 0.19). Thus, while optimists generally wrote about closer events, (B = -0.491, t = -2.67, p = 0.008), and emotionally intelligent individuals tended to do write about the future (B = 1.15, t = 2.25, p = 0.025), none of these individual differences seemed to explain the tendency to talk about the near past and more distant future.

Discussion

Study 2 provides further evidence for when consumers talk about and provides evidence consistent with the hypothesized process. First, even outside of social media, consumers were more likely to talk about things that were temporally near, rather than far away. Second, consistent with the field data, talking about the future versus past changed how far away consumers tended to talk about. When talking about the future, consumers tended to talk about things that are further away.

Third, the results suggest that accessibility plays an important role in when consumers talk about. Asking consumers to simply list things that were top-of-mind led to a similar temporal asymmetry as when they thought about what to share with others. Fourth, consistent with our theorizing about why there are differences in what is accessible between past and future, future content was more about goals and plans. Further, this measure of goals and plans was positively correlated with temporal distance.

STUDY 3: THE ROLE OF GOALS AND PLANS

Study 3 directly tests the role of goals and plans in the observed past-future asymmetry. As noted in the introduction, goals and plans become less accessible once fulfilled. Consequently, future goals and plans should be more accessible than past ones. Further, given the necessity of planning for such things, future-oriented thought may focus on time spans further from now. These aspects may lead future things that are talked about to be further from now.

To test this possibility, in addition to manipulating whether consumers talk about the past or future, we restrict half the participants to write about a goal or plan. If goals or plans drive the past–future asymmetry, as we suggest, then this manipulation should moderate the effect. While consumers in the baseline condition should talk about further things in the future, discussing goals should reduce this gap, making the past condition look more like the future.

Said another way, past goals should be naturally less accessible due to being completed (Förster et al., 2005; Zeigarnik, 1927). Reminding consumers of these goals should increase temporal distance of the past, making it less dictated by recency (Postman & Phillips, 1965).

Method

Three hundred and sixty-one Mechanical Turk participants (average age 38.71, 59% female) were randomly assigned into one of four cells in a 2 (Temporal Direction: Past or Future) $\times 2$ (Goals: Yes or Control) between-subjects design. Of the initial 578 participants, 34 did not correctly pass an attention check, 89 wrote about the present, and only 361 correctly wrote about the temporal direction requested.

In the control conditions, similarly to Study 3, participants were simply instructed to write 30 characters about either something that happened (Past) or coming up (Future) that they might mention to the friend.

In the Goals conditions, participants did almost the same thing, but focused on something related to goals or plans. In the *Future* [Past] conditions, participants were asked to write 30 characters about "a goal or plan of yours *that's coming up, is coming together, or you will reach* [that happened, came together, or you reached]" that they might mention to a friend.



FIGURE 5 Goals explain the past-future asymmetry in sharing

Finally, participants rated the temporal distance of the event they described on the same scale from previous studies. This rating was again transformed into the 1-(1/[1+distance]) index.

Results

First, consistent with previous studies, there was a main effect of temporal direction (*F*[1, 357] = 43.13, p < 0.001; d = 0.818). Relative to past posts (M = 1.70 days; $M_{index} = 0.63$, SD = 0.33), future posts were further from now (M = 5.25 days; $M_{index} = 0.84$, SD = 0.19).

Second, and more importantly, this was qualified by the predicted interaction (*F*[1, 357] = 15.84, p < 0.001; Figure 5). In the control, or baseline condition, results were the same as the prior studies: the things people said they would share were further from now when they wrote about the future ($M_{\text{Past}} = 1.11$ days, $M_{\text{index}} = 0.53$, SD = 0.34; $M_{\text{Future}} = 4.10$ days, $M_{\text{index}} = 0.80$, SD = 0.20; *F*[1, 357] = 65.72, p < 0.001, d = 1.022). Having people focus on goals, however, attenuated this effect ($M_{\text{Past}} = 4.36$ days, $M_{\text{index}} = 0.81$, SD = 0.24; $M_{\text{Future}} = 7.43$ days, $M_{\text{index}} = 0.88$, SD = 0.17; *F*[1, 357] = 2.90, p = 0.09; d = 0.347).

Said another way, while restricting people to talk about goals or plans made everyone talk about things that were further from now (main effect of Goals: *F*[1, 357] = 48.03, p < 0.001; d = 0.696), this had a larger effect among people talking about the past (*F*[1, 357] = 47.98, p < 0.001; d = 0.950) than future (*F*[1, 357] = 5.73, p = 0.017; d = 0.410). Focusing on goals and plans made responses about the past look more like those regarding the future.

Discussion

Study 3 underscores the underlying role of goals and plans in the observed past-future asymmetry. Consumers tended to talk about things further from now when they talked about the future, but restricting discussion to goals and plans attenuated the effect because it moved past things further from now.

GENERAL DISCUSSION

Word-of-mouth is both frequent and important. Consumers often talk and share, and such social transmission has a significant impact on choice and sales (Babić Rosario et al., 2016; Berger, 2014). But, while a burgeoning stream of research has begun to examine what consumers talk about and why, *when* consumers talk about has received less attention.

The present investigation begins to fill this gap. Analysis of thousands of social media posts, and faceto-face conversations, combined with laboratory experiments demonstrate both when consumers talk about and why.

First, the results demonstrate that consumers are more likely to talk about things that are temporally near. Whether looking at thousands of Facebook posts (Study la), tweets (Study lb), or offline (Study lc, 2, and 3), consumers were more likely to talk about temporally near intervals (e.g., within a week) compared to distant ones (e.g., over a month from now).

Second, the results show this pattern is moderated by whether consumers are discussing the past or the future. When talking about the future, consumers are more likely to discuss things that are further away.

Third, the studies suggest that accessibility via goals and plans contributes to these effects (Studies 2 and 3). Asking consumers to list things that were topof-mind led to the same temporal pattern of sharing asking consumers what they would share with others (Study 2). Further, consistent with the notion that goals and plans play a role in the past-future asymmetry (Study 2), instructing people to discuss goals reduced the asymmetry (Study 3). Consistent with the notion that the past relies more on temporally recent events and less on otherwise inactive, less accessible goal content (Zeigarnik, 1927), encouraging consumers to talk about past goals led them to speak about temporally further past distances but not temporally further future ones.

Implications

These findings suggest that cues in the environment may play an important role in shaping when consumers discuss. While proximal events tend to be more accessible, and thus more likely to be shared, the environment should shape the concepts, ideas, and topics that are topof-mind. Someone talking about spring break, for example, may remind someone of what they did last year, and thus encourage them to discuss it. Such cues should also shape what people talk about and may provide insight into how conversations evolve (Berger & Heath, 2005; Berger & Schwartz, 2011). One person may bring up a particular topic or idea, which may cue related topics and ideas in their conversation partner, shaping how conversations move from one topic to the next.

The results also have implications for how companies encourage and manage word of mouth. Consumers may be more willing to share word of mouth about something that is temporally far away when that thing is in the future rather than past. Consequently, while a band may benefit from asking their fans to talk about an upcoming concert a few days in advance, after the event occurs, they should encourage consumers to post right away. Further, the temporal distance of what is requested to be shared could depend on the extent to which the content is goal or plan-related. Wellness companies which handle dietary or other health goals, for example, could potentially involve sharing of something temporally further on the horizon because said content may be more likely to stay top-of-mind.

Potential limitations and future directions

The present work highlights interesting directions for further study. We focused on accessibility, but other factors (e.g., motivations or situational factors) may also play a role. Other differences between the past and future (e.g., event representation, specificity, or prototypicality; Kane et al., 2012) may also contribute. It may be cognitively easier to think of events at certain temporal distances, for example, depending on whether they are in the past or future. Alternatively, people may prefer to share temporally near events, but given that future events are perceived to be temporally closer than past ones (Caruso et al., 2013), what is considered "near" may differ between the past and future. That is, objectively further events in the future may feel as temporally close as objectively-nearer events in the past, and people merely share events that feel, subjectively, similar distances away.

More generally, it would be interesting to consider the inferences made by conversation partners based on when someone talks about. Might listeners infer that someone has less going on, for example, if that person is always talking about distant things rather than more proximal ones? If someone talks about something that happened in the distant past (e.g., a concert they went to 3 months ago), listeners may infer the speaker does not have anything better to talk about, and as a result, think less positively about that person. Something similar may occur if people talk a lot about the distant future. Talking about what you are doing for spring break in 3 months, for example, might suggest you do not have anything else of interest going on until then. However, such inferences may be mitigated when people are asked a specific question that requires thinking about something temporally

further away (e.g., have you ever gone skiing?). Because those instances may require digging into the far past, talking about things far way may be seen as less informative as a result.

Building on this point, future work might also consider whether sharers choose when to talk about based on impression management concerns. If sharers are aware that recipients may make inferences based on the temporal distance of when they share, they may pick when to talk about accordingly. This begs the larger question of whether shares intuitions about recipients' inferences are accurate. Do people share too much about temporally near topics because they think it will engender positive impression that they are busy people with an active life? Will receivers actually care about the exact temporal distances? These and other questions are all fruitful areas for future work.

It would also be worth considering the consumer welfare implications of talking about different temporal directions. Might talking about the future, for example, make people happier than discussing the past? Might talking about the past be beneficial because it allows the re-consumption of positive memories? Part of the answers depend on what people talk about when they talk about the past versus future, so to begin to explore this question, we use LIWC (Pennebaker et al., 2015) to examine the use of positive and negative emotional words. Posts about the past use more negative emotional words than posts about the future (Study 1a: $M_{\text{Past}} = 3.07$, $M_{\text{Future}} = 1.67$; F(1, 1264) = 16.41, p < 0.001, d = 0.228; Study 1b: $M_{\text{Past}} = 3.31$, $M_{\text{Future}} = 1.58; F(1, 901) = 24.93, p < 0.001, d = 0.333;$ Study 2: $M_{\text{Past}} = 1.55$, $M_{\text{Future}} = 0.68$; F(1, 1083) = 45.37, p < 0.001, d = 0.358), and past posts sometimes use more positive emotional words than future posts, but not always (Study 1a: $M_{\text{Past}} = 7.01$, $M_{\text{Future}} = 5.99$; F(1, 1264) = 4.18, p = 0.041, d = 0.115; Study 1b: $M_{\text{Past}} = 5.02$, $M_{\text{Future}} = 4.40$; F(1, 901) = 1.67, p = 0.20, d = 0.087; Study 2: $M_{\text{Past}} = 4.92$, $M_{\text{Future}} = 4.65; F(1, 1083) = 0.69, p = 0.41, d = 0.07)$. Future research may examine whether these asymmetries translate into different hedonic consequences.

Work might also examine implications for other facets of consumers' lives, such as planning or relationships. Does the temporal nature of what is shared, for example, influence perceptions of relationship closeness? Temporally further topics may tend to be more significant life events, for instance, and as a result could foster deeper social connection.

CONCLUSION

Part of being human is the capacity to mentally time travel, retrospecting about the past and prospecting into the future (Tulving, 2002). Indeed, a great deal of work has examined how time shapes a range of judgments and behaviors, from imagining how a particular choice will impact happiness to how we perceive the value of our

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labors (Caruso et al., 2008; Kumar et al., 2014). Further, given the frequency and importance of word-of-mouth (Berger, 2014), a burgeoning stream of work has begun to examine underlying drivers.

Yet while there has been a lively stream of research in both these areas, little work has integrated them to examine *when* consumers discuss. This work provides a preliminary investigation, providing some evidence for when consumers tend talk about and why. Hopefully it will encourage more researchers to consider both the drivers, and consequences, of when consumers talk about.

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