Together Alone: Motivations for Live-Tweeting a Television Series

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ABSTRACT

In this paper, we explore motivations for live-tweeting across a season of a television show. Using the third season of *Downton Abbey* as a case study, we followed 2,234 live-tweeters from the show's premiere episode to its finale, finding that nearly a third of users returned each week to tweet. Semi-structured interviews with 11 diverse live-tweeters revealed that the decision to live-tweet is dependent upon a variety of personal considerations and social conventions forming around this emerging TV viewing practice. This includes the desire to feel connected to a larger community that is interested in the show. Participants actively sought to protect the user experience of others by following good live-tweeting "etiquette," including limiting their number of posts and censoring content that might spoil the show for others. Over time, live-tweeting helped users build and maintain a network of fellow *Downton Abbey* viewers with shared interests.

Author Keywords

Live-tweeting; annotation; user research; social television; second screen; Twitter

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

INTRODUCTION

The use of Twitter during live television viewing has become an increasingly common practice. Using second screen devices such as laptops and mobile phones, viewers collectively annotate and provide commentary for their favorite programs in real time, often using show-specific tags and keywords. For fans, the act of "live-tweeting"—the real-time annotation and discussion of television shows on Twitter—can provide an instant, online forum for connecting with others watching the same show, making TV viewing an even more social experience.

This emerging practice has also caught the interest of television networks and advertisers. At a time when many

viewers either DVR or download television programs to watch at their convenience (and fast-forward through commercials), encouraging live viewing practices such as live-tweeting has become a priority for the television industry. In the realm of social television, Twitter activity has become a standard for measuring the real-time impact of television shows. Networks also routinely display an official hashtag at the beginning of each show to encourage live-tweeting. The Nielsen Company, the lead TV audience measurement firm in the United States, has created the "Nielsen Twitter TV Rating," set to debut in late 2013.[1]

As live-tweeting and television become more interconnected, understanding the user motivations behind this practice can lead to better social television experiences. Much of the previous work on television live-tweeting has focused on the quantitative study of television events, such as presidential debates [16, 17], or single television episodes within a series [8, 11, 16]. In this mixed-methods study, we expand upon existing research by looking at live-tweeting behavior related to a serial drama whose story unfolds across multiple episodes. In particular, in order to guide the design of future social television systems, we sought to understand what motivates viewers to live-tweet and why they continue to participate in this online activity throughout the season. We were also interested in how people balanced watching the show and tweeting as well as exploring browsing versus posting behaviors.

Using the PBS serial drama *Downton Abbey* as a case study, we identified a sample of 2,234 users who live-tweeted the show's highly publicized third season premiere and studied their activity across subsequent episodes. We wanted to understand the extent to which this activity was sustained beyond the novelty of the first episode, especially in light of other popular television shows airing at the same time. In addition, semi-structured interviews were completed with 11 diverse live-tweeters that focused on the motivations behind their *Downton Abbey* live-tweeting activity. This research suggests that live-tweeting is a complex social process with its own set of emerging conventions and practices. Understanding these conventions has wide implications for the development of television programming and second screen applications.

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[1] http://www.nielsen.com/us/en/press-room/2012/nielsen-and-twitter-establish-social-tv-rating.html

PREVIOUS WORK

Earlier research on social TV focused on the design and study of companion systems meant to enhance viewers' social connections with friends and family. Rather than focusing on asynchronous, online discussions about TV, these systems connected viewers together during live broadcasts. For example, AmigoTV offered viewers a suite of social tools for viewing television with friends, such as voice chatting and on-screen animated emoticons [4]. Another system, Social TV 2, combined lightweight messaging with a physical device to signal when others with the system were watching television, allowing users to coordinate viewing together at a distance [6]. While these systems did not enjoy widespread adoption, viewers continue to tap into real-time audio and video tools offered by programs such as Skype and Google Hangouts to watch television with friends at a distance [9].

In the case of FriendFeeds, Basapur et al. [1] developed a second-screen application to encourage the sharing of related content about a show amongst already-existing small groups of friends.

The popularity of microblogging services such as Twitter has shifted much of the discussion about social TV toward second-screen applications that allow large groups of viewers to collectively annotate a television show as it airs. Twitter allows for more open conversations among interested viewers beyond friend groups. Huang et al. [7] found that users tag content on Twitter to participate in conversational "micro-memes"—time-sensitive, ad hoc discussions around a topic. Conversational tagging is particularly relevant to television live-tweeting, as using show-specific hashtags helps categorize a particular tweet while also providing a window into wider conversations with friends and strangers about a television show.

Live-tweeting itself has been studied in previous work from a variety of perspectives. Using social network analysis, Doughty et al. [5] studied how users converse on Twitter during different types of television shows (reality TV and a current events show). They found that entertainment-oriented shows exhibited less reciprocity in Twitter mentions than the current events show. Conversation about entertainment shows was more focused on discussions with celebrity Twitter accounts, while discussions around the current events show occurred among smaller, connected groups of friends.

Researchers have also looked at aggregate live-tweeting data to help them understand how television events unfold. Shamma et al. [16] studied Twitter use during the 2008 presidential debates, finding that the structure of live-tweeting activity can be used to predict the structure of media content. In addition, they found that tweeters did not tweet to summarize or discuss the content of the debate, but instead posted their immediate reactions and evaluated the debaters' performance.

Relatedly, Lochrie and Coulton [8] conducted a quantitative study around the reality TV show *X-Factor*, finding that, unlike with previous work studying debates, in which tweets rarely correlated with the specific topics being discussed by politicians, live-tweets related to this entertainment show significantly correlated to the content of the program. The authors speculate that the visuality of entertainment programming is more conducive to second-screen interactions.

Several qualitative studies have analyzed the types of content live-tweeters post about television. Wohn and Na [18] analyzed the content of tweets posted about both a political speech and a reality television show. Categorizing the tweets in an AEIO matrix—attention, emotion, information, opinion—they found that the content of live-tweets correlated strongly with the television show content. They also observed a rise in tweeting activity during commercial breaks.

In study of live-tweeting around the show *Glee* by McPherson at al. [11], viewers discussed live-tweeting as a way to feel connected to a wider audience of viewers, a feeling also expressed by viewers in our study of *Downton Abbey*. A content analysis of *Glee* tweets showed that the two most common tweet categories were providing play-by-plays of the action unfolding on the screen, and making comments about their enjoyment of the episode or the show in general. While McPherson et al collected data from multiple episodes, they did not look at temporal activity throughout the season or motivations to continue tweeting from week to week.

Previous work on Twitter and television focuses almost exclusively on the content of Tweets, however we are interested in the context of Twitter use and specifically on user motivations for live-tweeting and understanding emerging practices. Our work reveals users' motivations to live-tweet throughout the season and is informed by a wide array of considerations, both personal and social.

DOWNTON ABBEY

Downton Abbey is a period drama set in post-Edwardian England, following the lives of an aristocratic family and its large staff of servants. The show's third season aired for seven episodes in the United States between January and February 2013 on the Public Broadcasting Service (PBS), a non-profit television network. This show provides an interesting social television case study for several reasons. First, the show was the subject of much critical acclaim, thus making its return to television a highly anticipated television event. This provided an opportunity to see how live-tweeting activity about the show changed after a widely publicized first episode of the season.

In addition, *Downton Abbey's* third season had aired the previous year in the United Kingdom, meaning that some American viewers in our study had already watched the entire season in advance of its United States debut.

Interestingly, for some viewers, knowing the plot twists in advance seemed to enhance their social television experience, allowing them to compare the reactions of UK and American audiences.

As a show broadcast on a public television station, *Downton Abbey* is presented in the United States without commercial interruptions, meaning that viewers who wish to live-tweet during the show must manage their television viewing with their second screen use. The show's lack of commercials led to many discussions in our qualitative study about live-tweeting and distractions.

Lastly, while many for-profit networks strategically shift airing dates or times for new episodes of their most popular shows in light of television events such as the Super Bowl or major awards shows, PBS did not make such schedule adjustments. Therefore, *Downton Abbey* aired consistently each week on Sunday nights beginning at 9 p.m. EST (8 p.m. CST) from January 6 through February 17, including going up directly against the Super Bowl and Grammy Awards.

Using *Downton Abbey* as our case study, we sought to explore the following research questions: 1) What motivates viewers to live-tweet throughout a season of a television show? 2) Is this motivation affected by social settings, or only by personal feelings? and 3) What do Twitter users perceive as acceptable live-tweeting behavior, and how do these emerging norms inform their live-tweeting practices?

METHODS

To obtain our initial sample of live-tweeters for our study, we ran a TweeQL [10] query for the keywords "`downton abbey`" and "`downtonabbey`" during *Downton Abbey*'s first episode. This program queries the Twitter Search API to return, for example, tweets that mention the show's name, tweets containing the #downtonabbey hashtag, or tweets mentioning the official @DowntonAbbey Twitter account.

We began our data collection 30 minutes before the show began, and ended 45 minutes after it ended, allowing time to capture both anticipatory tweets and post-show discussions. In total, our query returned 26,540 tweets from the Twitter Streaming API from 13,828 unique users. Following previous work [11], we eliminated users from our sample who tweeted only once about the show, leaving a sample of 3,805 unique live-tweeters.

After *Downton Abbey*'s complete third season had aired, we refined this sample further, downloading Twitter profile data for each user, as well each user's complete Twitter timeline posted between the show's premiere and its finale. We removed users from our sample who had not self-identified as living in the Eastern or Central Time Zones (n=1,304), users whose accounts were subsequently deleted or set to private (n=165), and users whose complete Twitter timelines could not be obtained due to Twitter Search API limitations (n=102). This final sample of 2,234 users and their corpus of tweets was used in our initial analysis.

Twitter Timelines

To analyze this larger corpus of Twitter data, we divided user timelines into segments corresponding to the times *Downton Abbey* aired on PBS, allowing extra time before (30 mins) and after (45 mins) to capture related conversations that happened outside the show's airing window.

In total, these segments contained 100,186 tweets. We compared each tweet against a list of 81 show-specific keywords (e.g. names of characters, actors, and production staff, locations and settings, etc.) compiled by a researcher intimately familiar with the show, revealing 40,304 *Downton Abbey*-related tweets (40.23% of all tweets during these intervals).

We validated this process by having one of the authors manually code a random sample of 400 tweets for relevance to *Downton Abbey*. The computer-coded tweets matched the human-coded tweets in 95.5% of cases (Cohen's kappa = 0.901), demonstrating a high level of agreement.

Recruitment

To recruit participants for our qualitative study, we randomly selected users from our sample and analyzed their Twitter use during the times *Downton Abbey* appeared on television. Using this information, we constructed an initial recruitment list of 33 users who had varying Tweeting habits. The features we considered in this selection process included number of shows tweeted, frequency of tweets, and number of retweets and mentions.

These users were contacted through one of the authors' personal Twitter accounts. An initial tweet informed participants that the researcher was studying Twitter use and *Downton Abbey*. Users who expressed interest were sent a link to an informational website where they could access information about the research project and sign up for an interview. Participants were offered a $10 gift certificate for completing the interview.

Interestingly, this method of recruitment resulted in a high yield of interested interviewees. Of the initial 33 participants contacted, 15 requested more information on the study, and 11 (33%) signed-up for an interview. The final 11 participants were diverse in terms of age (19–50, mean age of 34), gender (3 male, 8 female) and occupation (e.g. college student, librarian, administrative assistant). As an exploratory study, we did not attempt to characterize the entire audience of viewers or tweeters, but instead sought to speak with viewers who had a range of experiences with live-tweeting. The final 11 participants completed a semi-structured interview with a researcher via phone or Skype, which lasted about 30 minutes.
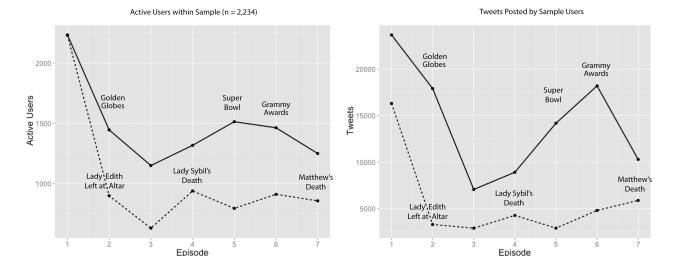
Figure 1: Graphs of overall and *Downton Abbey*-related Twitter activity for users within our sample, showing active users (left) and total tweets posted (right). The top bold line represents all activity by users in the sample, whereas the dotted line represents activity related to *Downton Abbey*. Major competing programs airing during the same broadcast window as *Downton Abbey* displayed above chart.

Interviews

Participants were asked generally about their television and social media habits, and then more targeted questions about their use of Twitter during *Downton Abbey*. In addition to explaining their reasoning behind posting particular *Downton Abbey* tweets from their timelines, participants were asked questions relating to their tweeting conventions (e.g. use of @mentions, RTs), their relationships with other live-tweeters, and how they managed second screen use with live television viewing. These interviews were audio recorded and transcribed.

With this qualitative data, our team conducted a team-based grounded theory analysis described by Metcalf and Harboe [12]. Using this method, we "extracted observations and behavioral descriptions from the data, identified patterns in the items, and named and described those patterns" [12]. One researcher analyzed the interview transcripts and identified the items for analysis, which were diverse quotes from our participants. These items were then organized by all co-authors through the method described above. Each theme discussed below has support from multiple diverse participants.

USER ACTIVITY ACROSS THE SERIES

Our analysis of Twitter user timelines revealed that many users from our sample returned to tweet about *Downton Abbey* in subsequent episodes (see Figure 1). The amount of activity devoted to *Downton Abbey* is at times surprising, given that the show aired in the same broadcast window as several highly popular television programs such as the Golden Globes and the Super Bowl. (The Super Bowl, for

example, attracted 108.7 million viewers and was the subject of 26.1 million tweets.[2])

In the weeks following *Downton Abbey*'s premiere, the number of active Twitter users from our sample ranged from 51–65% each week. Looking at those who posted about *Downton Abbey* during its airing window, 28–40% of users posted about the show during a given episode.

The frequency of tweets per user was significantly higher during the premiere than in subsequent episodes, which speaks to the season premiere's status as a more "tweetable" television event than subsequent episodes.

Plotting the volume of tweet activity over the course of each episode shows notable spikes in activity at some of the show's tensest and most surprising moments. Figure 2 (below) displays the user activity for two episodes in season three of *Downton Abbey*. Episode four in particular contained several scenes relating to the dramatic death of one of the show's characters, and the viewer reaction to this event is apparent within the timeline. Our interviews with live-tweeters confirmed that this was one of the season's most "have-to-tweet-about" moments.

FINDINGS

Analysis of the qualitative data from our interviews with live-tweeters revealed that live-tweeting is a complex social process in which users make many considerations about their post content and frequency of tweeting. In this paper we discuss six major themes from our analysis that help

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[2] http://www.nielsen.com/us/en/newswire/2013/super-bowl-xlvii-draws-108-7-million-viewers-26-1-tweets.html
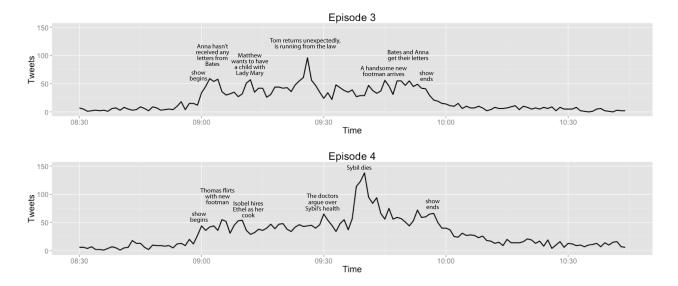
Figure 2: Time plots of tweet activity (tweets per minute) for episodes three and four of *Downton Abbey*. Annotations describe the on-screen action associated with the spikes in user activity. Episode four contains a notable increase in activity during the dramatic death of a character.

build a broader understanding of this emerging television practice: personal benefits, etiquette, triggers, attention management, and impacts on friendships and ratings.

Live-Tweeting "Triggers"
In general, participants noted that twists in the plot or story arc were the most obvious "have-to-tweet" moments. As interviewees described them, their reasons for live-tweeting fell into three broad categories.

Sadness/Grief
Many participants mentioned that feelings of grief and sadness prompted them to post tweets about the show. They attributed this to the emotional connections they had made with the characters throughout the series. In particular, the unexpected deaths of two main characters caused many users both to tweet and seek out others' tweets. P1 said: "Sybil's death, that was probably the most, you know, need to tweet about moment of the last season. Um, that's because it was so, you know, sudden and shocking that you sort of want to interact with other people about it and see what their feelings about it were." P8 mentioned similar feelings: "Obviously like the huge, crazy death of Matthew Crawley in the finale, and the death of the sister Sybil, that was something I tweeted about."

Interestingly, in cases where users had watched the show online in advance of its United States TV premiere, these major plot twists created the opposite effect—participants decided *not* to post to their Twitter timelines. Instead, they focused on reading others' reactions. P3 said:

"At the very end, you know, I knew Matthew was going to die ... so I was already starting to tear up. I think that the particular scene where Matthew is holding the baby and Mary's lying there and they are all in their glory and it all looks so wonderful ... when I knew my timeline would

explode with people being upset and with the anger and, I didn't tweet anything because I just wanted to just see what people were going to do or say."

During the death scenes, P2 also focused on reading her Twitter timeline to see if others were experiencing the same kind of grief she felt months earlier: "Since I had watched [previously] in December, literally I had gone through the grief on my own, because I couldn't really say anything to everybody, because I didn't want it to be a spoiler. I had to see [the Twitter reactions] because—it was like so many months later. Because when I was watching it, nobody else was watching it."

Television viewers can develop attachments the show's characters over the course of a series, making startling events such as character deaths particularly shocking and saddening. In our study, participants turned to Twitter not only as a means to share their own sadness and grief, but also to view and understand the reactions of others.

Humor
Comedic moments in the show were also mentioned by participants as a main inspiration for their tweets and retweets. For P7, tweeting about *Downton Abbey*'s humor helped provide contrast to the serious plot lines of the show: "I think anything really comedic I would tweet about. Because it is such a dark show sometimes. You really kind of need to cling to those comedic aspects, so I would try to tweet about those."

In particular, the pithy, one-line insults delivered by the character Violet Crawley were at the center of many conversations. P8 noted, "For me I expected when I first started to watch it that it [Downton] was going to be very dry, but I think the most tweetable moments and the ones that, you know, pop up the most online and in conversation

the next day with my friends would always be one-liners." Several participants mentioned that they often retweeted postings from Downton Abbey parody accounts that captured the show's most humorous lines.

Humor was also expressed by making light of the characters' unfortunate moments. As P11 recalled, "When Edith got left at the altar, there were lots of funny comments. Bless her little heart." These types of tweets were described by several interviewees as "snarky" and "sarcastic," making light of the very serious moments in the show.

Character Development
A third reason for live-tweeting dealt with issues of character development. In general, these types of tweets were posted when participants noticed long-term changes in a character's actions or ambitions. For example, P8 noted, "I definitely posted and saw a lot of people who I follow post about the development of the character of Tom who was Sybil's husband who became the widower turned new father, you know, dealing with everything." P9 tweeted when she considered a character's current actions in light of the character's tragic past: "[I tweeted because Edith was] kind of stepping forward and moving on from all the pain she's been through in the season. That's basically what I was thinking. Instead of just sitting around and waiting, she just went out and tried to seize a couple of things on her own."

Sometimes, these tweets are not directed toward the show's characters, but instead at the show's producers. P6 posted a tweet because he was upset that a plotline between two characters had turned stale: "[I tweeted because] I thought that [Downton] was spending too much time on if Matthew was going to give the money to the house, and Mary was getting all upset about it, and to me they were spending too much time on it, and it looked like they needed to get a baby or do something else."

This category of tweets is not simply based on an immediate response to the action on the television screen, but also incorporates a viewer's deeper knowledge of the characters spanning several episodes, or the entire series.

Personal Benefits of Live-Tweeting
Users in our study described an array of personal benefits they gained from live-tweeting. In general, tweeting while watching television gave participants a sense of connectedness with a broader audience.

Feeling part of a wider phenomenon
Most participants articulated a sense of feeling part of a larger phenomenon that included not only their circle of friends, but others across the country sharing in the same television experience. As P1 explained, the difference between watching Downton Abbey with and without Twitter is "sort of like the difference between watching a

movie at home on a DVD and watching the movie in a movie theater … Like when you go to a movie theater and you feel like you're part of an experience because there are other people sharing it with you."

P3 described live-tweeting Downton Abbey as participation in a larger "process," and several other interviewees mentioned the excitement of feeling a part of an "interactive" television viewing experience.

According to P4, building a following of other interested viewers is something that happens slowly, and only through consistent Tweeting habits. She noted, "Twitter seems to be one of those things, the more you do it, the more people see what you say. And the more hashtags and mentions you put in, the more likely it is that people will see what you've written." Like other participants in our study, P4 is motivated to continue tweeting about particular shows to help augment and maintain her Twitter audience.

Not feeling alone
Eight of our interviewees discussed live-tweeting as a viewing practice that allows them socialize with others, especially when they are watching television alone. In some instances, this is because friends and spouses have different television interests. P3 says she turns to Twitter because her husband does not share her interest in British television shows: "Since [me and my husband's] TV habits are so different, in a sense by using social media I'm sort of getting that same experience, but with strangers."

P2 finds the live-tweeting community comforting when she has no one around to talk to. "If I can't say it to anyone else around me, I'll just put it up on the Internet. Someone will read it, someone will agree with me at some point. I'm not alone. It's just a reassurance that I'm not alone."

Affirming personal opinions
Many participants used the live-tweeting community as a way to affirm their own personal thoughts about the events in the show. In particular, interviewees expressed satisfaction in knowing that others agreed with their observations about Downton Abbey. P9 said, "It was kind of interesting because I found out a couple people were thinking the same things I was thinking during the show."

For P6, finding that others share his thoughts about the show helps create feelings of a shared experience: "It's just that everybody's watching the same thing that you're watching, and so, and then reading their tweets you can tell that they're having the same thoughts that you do, and it's just, that's what I get out of it, that's what makes it fun."

Live-Tweeting Etiquette
In discussing their own live-tweeting practices, many of our participants in turn described what they considered an emerging set of best practices for Twitter and TV.

Avoiding "Overtweeting"

Many interviewees described feeling concerned about the amount of live-tweets they posted to their Twitter timelines. In fact, P11 even created a separate Twitter account for live-tweeting: "A lot of people follow me on my regular Twitter that really don't care … what I have to say about television."

P1 explains that there should be a "balance" in the amount of tweets one posts about a particular show. On his own Twitter timeline, he notes that some members he follows "go on these tweeting and retweeting rampages … where they'll post 10 tweets in 30 seconds, and then rewet every tweet that's possibly related to what they tweeted about. It just becomes too much."

P6 also mentioned his frustration with live-tweeters who make too many posts. Instead of "redoing the whole entire show" on their Twitter feeds, he says live-tweeters should instead post "specific lines that make your mind melt. The quips characters say. Those make good tweets." He tries to limit his own tweeting to those he finds particularly meaningful or humorous.

For P3, her excessive tweeting about television led to a disagreement with a family member. She recalled: "My sister-in-law once said to me, 'I started following you on Twitter, but you live-tweet all these dang shows and you fill up my timeline, and so I unfollowed you.' I was like, Okay, whatever." P3 says despite this complaint, she will not change her tweeting habits, because "If you don't want to see [my live tweets], then don't follow me."

Signaling Intention to Live-Tweet

Some participants try to mitigate any negative impacts their live-tweeting might have on their relationships with followers. Three participants mentioned "signaling" their intention to live-tweet on their timelines before a show begins. This alerted like-minded followers that they were watching the show, while also serving as a "disclaimer," according to P11, that "I am going to yammer about TV shows."

Avoiding "Spoiler" Tweets

Because live-tweeters recognize that not all of their followers watch *Downton Abbey* during its live broadcast, many participants in our study developed ways of posting about major plot twists in the show without spoiling the show for others. P11 says this is especially important because she has Twitter followers in California, where the show is broadcast several hours later.

Most participants use demonstrative pronouns as a way to mask the specifics of the scenes they are live-tweeting. P5 says she makes comments such as, "'I can't believe he just said that,' or, 'What is this ridiculous situation?' You know, things that other people watching will understand, but it's not going to be evident to anybody who doesn't know what's going on what's going on."

P8 avoids putting any of his live-tweets in "black and white terms" so his tweets about *Downton Abbey* can be overlooked by followers who are not currently tuned into the show.

Despite many participants' efforts to avoid posting spoilers themselves by avoiding social media sites if they miss a television episode, several have had key plot points spoiled by others. For P5, *Downton Abbey* was spoiled when a local coffee shop tweeted about the death of a character several days after its broadcast. She said, "I sent them a grumpy tweet back, saying, Hey, not all of us have seen that yet. It was the week that Sybil died." After the spoiler was revealed, P5 decided to stop watching the show.

P8 notes that many tabloids rush to publish spoilers: "People magazine will tweet, 'She might have been jilted at the alter, but Edith looked beautiful! … I'm like, Oh my god, I can't believe that. I'm not home now, I can't watch this." P2 had a similar experience with friends posting spoilers on her Twitter timeline: "I was like, damn it, I have to watch it. I closed my computer and I went and watched [the show] live … I turned off Twitter and I turned off my phone and I watched it—in peace."

Live-Tweeting Live—or Not at All

Several participants discussed the fact that live-tweeting is only meaningful to audiences at the time the show is airing on television. As P8 summarized, "When somebody's tweeting about something days later, that's terrible. It looks like Twitter pollution," adding that users should "live-tweet it or don't tweet it at all."

P5 noted that she is hesitant to live-tweet about the television shows she's watching since she does not "watch a lot of TV that's happening." She felt that thoughts she had after the show had aired were "not relevant to tweet about."

Managing Social TV Activity

Tweeting as a Distraction

Managing second screens with television viewing is an ongoing challenge for live-tweeters. In a show such as *Downton Abbey* with no commercial breaks, viewers must strategically time their tweeting with the action unfolding on the screen. P7 mentioned that "it's a bummer that the show doesn't have commercials, because I would definitely tweet more."

For some participants, live-tweeting is no different than other everyday distractions. As P5 notes, "I'm pretty distractible, so [tweeting] doesn't really matter. If it's not that, it's the cat, or the cracks on the ceiling, or some noise. The show is only going to keep a certain percentage of my attention anyway."

However, most of our interviewees could recall moments where live-tweeting caused them to miss an important moment in the show. P3 said that tweeting has changed her TV viewing experience: "You can miss things, you don't

concentrate as well because you're doing two things at once. Your brain is engaged in something visual and then your brain is engaged in, you know, writing what you're thinking and feeling."

Our participations mentioned several strategies for managing their live-tweeting and television viewing. P11 waits "until a slow part in the story" or pauses the show to send her tweets. When P6 and P9 feel like tweeting is distracting them from important scenes in the show, they put away their second screens and focus only on the show.

If viewers do miss parts of the show due to live-tweeting, P7 says the stakes are low due to the availability of many TV shows online: "I feel like the process of recording your reactions to the show at the time outweigh the fact that you might miss one or two lines. And then if you really do miss it, you can always watch it later, like online the next day."

A Social TV Ecosystem
While Twitter is the most prevalent social media service for the live-annotation of television shows, many participants noted that their social television viewing experience unfolds across a variety of services and platforms. In particular, participants noted that when they communicate with family and close friends about television, they often switch from Twitter to less public methods of communication.

Three participants often send text messages to friends and relatives while watching television shows. P7 explained that, compared to Twitter, text messages deliver social television content to friends on a "more personal level." P11 texts "quite a bit" while watching TV because "not everybody cares" what she has to say about the show.

P9 recalled connecting with her cousin through Skype so she could remotely watch a television show on a premium cable channel. "We talked while the show was on [on Skype]. They were watching from their house, and I was on Skype talking to them. It was fun."

When considering their interactions with the wider viewing audiences, participants mentioned GetGlue as another social television platform they had used or had seen others use. P1 describes GetGlue as "sort of like FourSquare for media" where fans can "check into" their favorite shows and interact with other viewers.

Most interviewees mentioned Facebook as an "occasional" source for social television commentary; however, several participants discussed the differences between Facebook and Twitter that makes Facebook less conducive for social television. P11 said that Facebook postings "make more of a lasting statement" than Twitter postings, which are "more of a short-term response."

P3 says she often gets annoyed when her friends inappropriately try to use Facebook to make live commentary about television shows: "[Live-tweeting] is not what Facebook is about, and it kills me if I just have to get on Facebook when there's a football game going on … I just wanted to go, People, live-tweeting the game is on Twitter, not on Facebook. I don't need to see your updates every minute while you're watching the game."

Strengthening Real-Life Friendships
While many live-tweeting interactions experienced by participants were with online-only friends or strangers, live-tweeting also provided an opportunity to strengthen existing real-life friendships, as has been observed in previous work on messaging while watching videos together [15], and even create new online friends who are watching the same show. However, for our participants, Twitter added a layer of serendipity to the discovery of shared television interests.

P7 learned that one of her college friends was interested in *Downton Abbey* after he favorited several of her tweets:

"My friend Seth, I didn't even know he liked Downton Abbey, and then he started like, favoriting my tweets. And I was like, You like Downton Abbey! So the next time I saw him, I was like, My Downton friend! And he's like, Ahhh! And so we all were like really excited that we knew, because we didn't know about that. And so tweeting about that kind of helps people know, Oh this person likes that too, which is kind of a cool thing about Twitter."

Several participants noted that their live-tweets became later topics of conversation among their real-life friends. According to P11, "Usually [friends will say in real life], 'That was really funny,' or 'I agree completely,' or 'Did that catch you off guard?' I'm usually not scared to talk about television with people. For me, it's always a good groundbreaker, conversation wise."

In P3's case, her live-tweeting has led to the creation of several new, real-life friendships: "We live like 90 minutes away from each other and we meet up and we see British films and we have lunch." She added, "It's fascinating to me because I don't think [making these new friends] would have happened without Twitter."

Influencing Ratings
When asked whether they thought the production staff of *Downton Abbey* had seen any of their live-tweets, none of the participants thought this was likely. However, they still thought that television networks and television producers monitored live-tweets. This led them to feel as though their tweets had an impact on a show's chances for renewal.

According to most interviewees, the strength of a show's Twitter community can serve as a public display of its success—or failure. As P8 recalled: "I've noticed that whenever a show that I've watched that inevitably gets canceled gets canceled, usually it's something that I'm not reading a lot about on Twitter, and if I do check the hashtag or the official Twitter account, the activity will be very, very low. There won't be a lot of replies, there won't be a lot of people tweeting about watching or enjoying it."

Participants also perceived live-tweeting to be a way for viewers to help increase a show's viewership. P3 wondered whether the live-tweeting community had contributed to the "explosion of popularity" of *Downton Abbey* throughout season three.

P7 views Twitter as more than just a platform for fans to converse about television. He has seen Twitter users mobilize to help shows on the brink of cancelation, coordinating their tweets to create Twitter trending topics and bringing wider visibility to the show.

In this sense, live-tweeters are motivated by a desire to help their favorite shows succeed, and see live-tweeting as a form of material participation in the shows they enjoy.

DISCUSSION

As a social media service in which most content is public and easily collected, Twitter has proven popular among researchers. Taken together, the analysis of this data has helped "open a surprising window into the moods, thoughts and activities of society at large" [14]. However most of the existing research has focused on what can be learned from the tweets themselves. Our research goes beyond this work to explore what cannot be found in the content itself through in-depth interviews about current practices.

In the realm of social television, large-scale studies of tweeting behavior have revealed key findings about the behavior of television audiences, and have also provided new sets of tools for the real-time analysis of viewer sentiment and engagement. Despite the abundance of such quantitative research, few studies have focused on what motivates individual Twitter users to live-tweet, and how live-tweeting fits within their everyday television viewing practices. In this study, we have attempted to look at these big questions surrounding live-tweeting on a small scale.

One key finding from this research is that television viewers are particularly motivated to live-tweet when viewing television alone, either due to viewers having different tastes in television than their friends and spouses or participants living alone. The live-tweeting community, then, allowed viewers to still feel that they were watching the show with others. Interestingly, these feelings of connectedness with others were still experienced by live-tweeters even if no one acknowledged their tweets.

In her book "Alone Together," Turkle [17] argues that communication on SNS provides hollow, inauthentic communication that distracts from in-person interactions. However, in our study, we observed Twitter having the opposite effect, particularly in contexts where participants' spouses or housemates did not have an interest in the show. Live-tweeting helped strengthen existing friendships or form new ones while conversing about the television content, even though participants were physically alone.

While some small-scale systems that help connect close friends who are watching television have been created (e.g.

[1, 13]), there is a much larger design space for making people feel together with a larger audience while watching content and experiencing reactions to key events in the show together.

Our study aligns with previous research showing that shocking or surprising moments in the show did prompt viewers to tweet [11, 18]. However, when discussing their reasoning for posting particular messages, participants rarely thought of their tweets as a simple reaction to what was happening on the screen. Character development in particular relies upon the viewer's long-term knowledge of the show's plot and characters and implies that future systems should help users to see a series as a whole and not just a set of disconnected episodes and characters.

Though few viewers in our qualitative study posted live-tweets each week throughout the series, most reported that their Twitter use itself was more regular. Even if they did not post tweets for a particular episode, participants still watched others' reactions on Twitter on their computers and phones. In some instances, viewers were more interested in reading others' thoughts about a plot development than posting their own. This suggests that posting tweets is not necessarily a live-tweeter's first instinct at interesting moments in an episode, and that a lack of tweeting activity does not necessarily translate to a lack of interest. Future models of viewer engagement should consider the importance of *listening* as a form of participation [3] in the realm of social television. This was particularly visible in the current study as viewers described their interest in reading the reactions of others in the show's tensest moments, rather than rushing to post their own content.

We have also uncovered how Twitter content related to a television show can prompt off-network behavior, such as talking about a show in person with a friend who was previously not known to watch the particular show that they tweeted about. The ability for Tweets and other forms of television-based presence to inspire communication is a rich area for future system development.

As a relatively new television viewing practice, the live-tweeting community is still in the process of developing a collective understanding of etiquette and best practices. As Baym [2] notes, "Community norms of practice are displayed, reinforced, negotiated and taught through members' shared behaviors," which develop and evolve over time. To some degree, viewers' live-tweeting practices are constrained by considerations within their own social networks. Fear of spoiling the show or excessively tweeting can provide limitations for how often one live-tweets and what the content of those tweets will be. In fact, live-tweeters may deliberately mask the show-specific content in their tweets, which has wider implications on the wide-scale collection and analysis of live-tweeting data. Therefore attempts to objectively quantify engagement based on volume of tweets may not reflect viewer's accurate experiences with the show.

CONCLUSION

In this research we have discussed an array of personal and social considerations that inform users' decisions of when to live-tweet—and why. Live-tweeting can help viewers feel connected to a large online viewing audience, while also helping to strengthen social bonds with real-life friends, providing a context for conversation around shared interests. Looking at user timelines across the entire season showed that many viewers continued live-tweeting about *Downton Abbey* in the weeks following the much-anticipated first episode. However, our qualitative study suggests that posting activity alone may serve as a weak indicator of engagement with others during a television show, since many social activities, such as interacting with friends face-to-face or using other media after seeing a Tweet are not visible on Twitter.

Live-tweeting presents an interesting domain for further research, in that it presents a context in which participants actively seek to protect the user experience of others. This research suggests that, while a desire to live-tweet can indeed be triggered by immediate reactions to the events unfolding on the television screen, oftentimes viewers developed their live-tweets by carefully considering the show's plot and characters over the course of many episodes or seasons. This shows that live-tweeters balance a desire for immediacy and relevancy in their tweets with a thoughtful consideration of tweet content.

This paper describes a set of motivations and practices around live-tweeting; however, we must consider that these practices may be specific to the *Downton Abbey* viewing audience. Future work should study live-tweeters around a variety of television genres, as different habits may become visible. Nonetheless, this work illustrates the constellation of social and personal motivations and benefits to live-tweeting, highlighting important considerations for the design of new social television systems.

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