

Understanding Para Social Breakups on Twitter

Kiran Garimella
Aalto University
Helsinki, Finland
kiran.garimella@aalto.fi

Jonathan Cohen
University of Haifa
Haifa, Israel
jcohen@com.haifa.ac.il

Ingmar Weber
Qatar Computing Research Institute
Doha, Qatar
ingmarweber@acm.org

ABSTRACT

Celebrity and fandom have been studied extensively in real life. Perceived virtual relationships, commonly known as para-social relationships (PSR) have been shown to exist between celebrities and fans [3]. The end of such relationships, para-social breakups (PSB), have also been studied [1]. However, with more and more celebrities using social media, the dynamics of PSR and PSB have changed. Using data from 57,000 fans for the top followed celebrities on Twitter, we try to understand how para-social breakups manifest on Twitter. We hypothesize that a PSB on Twitter happens as an act of unfollowing the celebrity and study the differences in engaging in a PSB between various types of fans. We find that, surprisingly, the most devoted fans are more likely to be involved in a para-social breakup. Given our scale and dependence on non-reactive data, our paper opens new avenues for research in para-social interactions.

INTRODUCTION

Since the advent of electronic media, para-social relationships (PSR) or para-social interactions (PSI) have been a widespread feature of advanced societies [3]. Horton and Wohl [3] define PSR as a one-way relationship that is imagined as a mutual relationship. Eyal et al. [1] introduce the idea of a para-social breakup, the end of a PSR. They find that a para-social breakup is like a regular romantic relationship breakup but not as intense.

Traditionally, the celebrity-fan relationship was very lop-sided, with one way interaction between the celebrity and the fan (typically through the television). With the advent of social media, PSR have become more reciprocal and ‘social’, or at least intensified the illusion of sociability by creating seemingly more personal and frequent communication between a celebrity and their fans. This has led to the creation of a special type of fan behavior with fans expecting personal intimacy with celebs, leading to a para-social breakup, in cases where the fans don’t get what they expected. This para-social breakup is manifested on social media by an act of unfollowing the celebrity.

In this paper, we perform the first large scale analysis of para-social breakups of fans with celebrities on Twitter. We define various fan types, based on their intimacy of interaction with the celebrity and study how fans belonging to the various types involve themselves in para-social breakups with celebrities.

Though para-social interactions [6] and breakups [2] on social media have been studied in the past, para-social breakups have special characteristics and understanding them at a large scale would be of great interest, with applications in brand loyalty, advertising and societal good, in general. Work has also been done on reasons for unfollowing on Twitter [4]. Kwak et al. conclude that most users unfollow ‘those who left many tweets within a short time, created tweets about uninteresting topics, or tweeted about the mundane details of their lives.’. In the case of a para-social breakup, we find that most unfollowing happens as an act of defiance against the celeb and despair of not receiving the personal attention that fans perceive they deserve.

DATASET

We started with a set of the 15 most followed celebrities from popular culture on Twitter (in May 2015), from <http://followerwonk.com/bio>. The selected celebrities were: @justinbieber, @katyperry, @taylorswift13, @ladygaga, @rihanna, @jtimberlake, @theellenshow, @kimkardashian, @cristiano, @britneyspears, @jlo, @shakira, @selenagomez, @arianagrande, and @ddlovato. Note that we did not include politician @barackobama, as we assume political fandom to have very different characteristics.

Each of these celebrities has tens of millions of Twitter followers (fans). Since it is not feasible to analyze all their followers, we sampled a subset of fans for each celebrity. We used stratified sampling to sample fans of three types, defined based on their level of interaction with the celebrity.

The three types of fans we defined were: (i) Involved – This is the set of fans who regularly interact with the celebrity in an intimate manner. To get this set, we first obtained all users replying to the tweets from celebrities and obtained users who replied to tweets from celebrities at least on five tweets with messages containing ‘i love you’ (or similar variations, like, ILY).¹ (ii) Casual – This is a set of fans who interacted with (replied/mentioned/retweeted) the celebrity at least once in the previous year (May 2014 – May 2015). (iii) Random – Random sample of followers of the celebrity, sampled randomly from the millions of followers the celebrity has. These fans need not have interacted with the celebrity beyond the act of following.

The choice for these three sets was made in order to obtain the complete spectrum of fans, from the highly invested fans, who engage with the celebrity all the time, to people who just follow the celebrity out of curiosity. We first sampled approximately 2,000 users from each set for each celebrity. We then applied simple heuristics to remove bots and inactive accounts (at least 10 tweets/followers/friends, been on Twitter for at least one year, etc.). We then up and down

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¹This is common for many celebrities on Twitter. As an example, see any tweet from Justin Bieber <https://twitter.com/justinbieber/status/809785232186478592>

sampled each group for each celeb to be approximately of the same size. This left us with a set of 57,609 fans.

For all the users, we used Face++ Api² on their profile pictures to obtain estimates of their age and gender. Face++ uses computer vision and data mining techniques applied to a large database of celebrities to generate estimates of age and sex of individuals from their pictures. We were able to obtain confident age and gender predictions for around 50% of the users (27,889 users).

PARA-SOCIAL BREAKUPS

In this section, we try to understand how different types of fans engage in para-social breakups. We assume that a para-social breakup on Twitter manifests itself as an act of unfollowing the celebrity. We tracked all the 57k fans for a period of 26 weeks (between 21 May 2015 – 21 Nov 2015), and got data on whether they still follow the celebrity every week. At the end of the data collection period, we recorded 2,369 fans unfollowing a celebrity during this period. We also estimate when the fans started following the celebrity using the method proposed by Meeder et al [5].

We model unfollowing behavior using Survival analysis. Survival analysis is a statistical tool for analyzing the expected time to an event (unfollowing, in this case). It can be used to answer questions such as: whether a group of fans is more likely to unfollow than others. We set up survival analysis as follows: (i) *Event*: The act of unfollowing a celeb, (ii) *Survival time/event time*: Months since following the celebrity to unfollow. e.g. if a fan follows a celeb in Jan 2015 and unfollows in Oct 2015, this variable is 10. We have data going back to the last 4 years (48 months). (iii) *Censoring event*: All users who haven't unfollowed yet. For example, if a user followed the celebrity in Jan 2015 and is still following, we censor the user after 27 months (Jan 2015 to Apr 2017) (iv) *Survival function*: Probability of unfollowing after x months.

Given this set up, our first task is to see if there is any difference in para-social breakups between the three fan types (involved, casual and random). Figure 1 shows the survival probability for the various fan types using a Kaplan Meier non-parametric analysis. Compared across groups, involved users have a statistically significantly higher probability of unfollowing. We can also see that the chance of unfollowing for random users is almost non-existent.

This finding might be counter intuitive, given we expect involved fans to feel “closer” to the celebrity. We can interpret this behavior in terms of a cost/benefit analysis. The more a fan engages the celeb, the more likely it is for the relationship to end. The more involved a fan is the more the emotional cost they invest in the relationship and thus the more likely they are to end it when it does not reward them.

We also looked at a para-social breakup using the demographics of the fans, inferred from Face++. We found that young and female fans tend to be high investors in engaging with the celebrity, whereas as older fans are less invested and less prone to disappointment and breakup (details omitted due to lack of space).

We manually looked at the profile descriptions of users who unfollowed, before and after unfollowing, and found interesting examples. (i) Before: ‘@arianagrande followed and faved (30.11.14)’, After: ‘dreams dont work unless you do. good vibesss!!’ (ii) Before: ‘thank you justin my life’, After: ‘find your purpose’ (iii) Before: ‘queen

Kaplan–Meier Survival Estimate for the different fan types

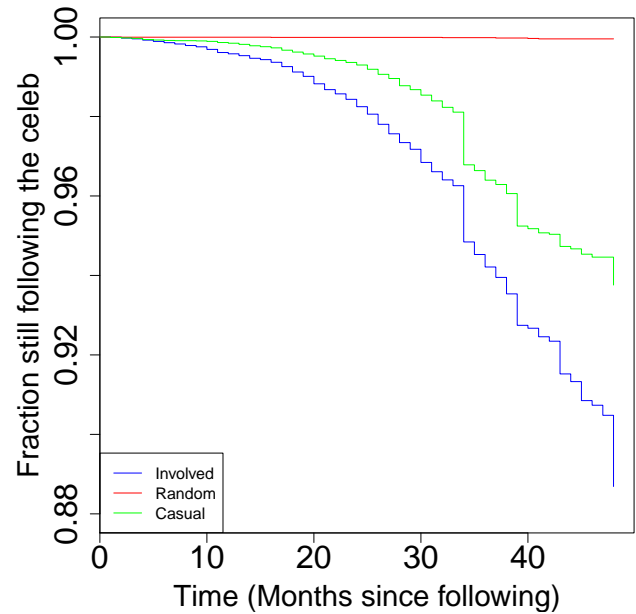


Figure 1: Survival probability for the three fan types

faved x2. pls follow 2, ma queen’, After: ‘im loving the pain, i never wana live without it’. These examples show cases of despair and a sense of defiance after not getting the personal attention they desired.

In summary, our analyses point to the complexity that social media use adds to fandom behavior and the various ways different fans engage in para-social breakups. As celebrities - and now presidents - continue to use social media as a central avenue to cultivate their following, engage their fans and influence society, it is worthwhile to study the ways such relationships are developed, maintained and dissolved.

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²<http://www.faceplusplus.com/>