

Algorithmic Amplification of Fan Circle Mentality: A Study of Chinese Table Tennis National Team Fandom on Social Media

Yijun Liang

International Department, The Affiliated High School of SCNU, Guangzhou, China
liangyj.genevieve2024@gdhfi.com

Abstract. The development of social media has greatly changed people's way of thinking. The algorithmic recommendation system continuously exposes netizens to content that aligns with their existing stances, thereby reinforcing their viewpoints and potentially provoking extreme speech and behaviors. This research aims to find out whether and how the algorithms extremify people's viewpoints. By studying posts and comments on Sina Weibo and RedNotes (using a 5-point scale and content analysis), this research finds differences between the two platforms, with Weibo being more emotional and RedNotes being more rational and less extreme. Most posts have an obvious tendency and comments under the post usually share the same stance, suggesting that users with similar stances are either exposed to similar content or are influenced by others' comments into changing their views. This research sheds light on the relationship between algorithmic recommendation and collective opinion, quantifies the ideological leaning of posts on social media, fills the research gap concerning fandom in the sports domain, and provides practical guidance for the regulation of social media.

Keywords: Algorithmic recommendation, social media, fan circle, group mind

1. Introduction

From 1986 to the present, the Chinese Internet has experienced great changes, from having limited use of email to now becoming the biggest Internet market in the world [1, 2]. The exchange of ideas and communication among netizens is the major characteristic of Chinese social media platforms [1]. Sina Weibo is one of the largest social media platforms in China. Netizens can send long passages, pictures, and videos; comment on or repost others' posts; and stay informed about current incidents based on their trending popularity. The algorithmic recommendation system on social media selects content for each user according to their interests. Thus, netizens tend to be exposed to topics that align with their interests and viewpoints, which further amplifies their opinions and emotions [3]. Fan culture refers to a group of people who show immense adoration toward a particular idol. This adoration includes not only appreciation for the idol's work but also love for the idol's appearance and personality. With the development of the Chinese sports industry, athletes have gradually become as influential as singers and actors, a phenomenon particularly evident within the

national table tennis team. Since the 2016 Rio Olympics, some fans' love for athletes has exceeded the sport itself, eroding athletes' normal lives, distorting the original meaning of sports, and contaminating the online space [4, 5].

The main research questions are (1) How does the algorithmic recommendation affect people's opinions? (2) Does the algorithmic recommendation worsen the polarization of the two groups of people's ideas? This research takes the fan community of the Chinese national table tennis team as a case study and examines it on Sina Weibo and RedNotes. This research fills the research gap in the field of competitive sports, provides quantitative measurements and in-depth analysis of opinions, and offers a reference for subsequent studies. In addition, this research has practical impacts on guiding the governance of speeches in virtual space and creating a clean public opinion atmosphere.

2. Literature review

2.1. Related theories

The Spiral of Silence theory suggests that when people perceive their viewpoints as different from those of the majority in a given group, they tend to remain silent for fear of social isolation or criticism, and minority viewpoints are seldom heard [6]. In the case of the Chinese National Table Tennis Team, the majority are fans who support the athletes in an extreme way. Under the pressure of the widespread expression of extreme viewpoints, minor opinions are seldom heard. The echo chamber effect refers to a situation in which people are repeatedly exposed to information and opinions that are similar to their points of view. They gradually reinforce their existing viewpoints [7]. On platforms such as Sina Weibo, netizens are frequently exposed to posts showing extreme support for the athletes in an inappropriate way. Those who normally support the athletes may align their viewpoints with the fan circle and engage in irrational behaviors as a group.

Uses and Gratification Theory argues that social media users actively choose mediums of obtaining information to satisfy their needs [8]. To attract users, Weibo recommends extremely irrational posts to stir people's emotions. People are satisfied with Weibo and its contents, so they become further immersed in a virtual atmosphere filled with polarized discourse.

2.2. The "new crowd" in algorithm-driven social media

The traditional crowd theory claims that within a psychological crowd, individuals tend to experience reduced independent judgment and become more susceptible to collective emotions and group influence [9]. Social media is a mechanism that creates, maintains, and enlarges the psychological group [10]. Through recommendation algorithms and filter bubble mechanisms, platforms prioritize content based on users' behaviors. As a result, users are trapped in a personalized information cocoon [11]. Distinct from traditional crowds, the "new crowd" diffuses and reinforces emotions more intensely: through texts, pictures, videos, livestreams, and topic tags, social media spreads thoughts vividly in a short time. Thus, the crowd on social media is not only more easily trapped in similar and extreme opinions but also more likely to participate in irrational behaviors as a group [10]. The Fan Circle as a Crowd: The social media era breaks the limitations brought by time and distance; stable fan circles are therefore created. Moreover, big data can recommend news about celebrities based on individuals' preferences, continuously reinforcing fans' affection for their idols [12]. Under the power of emotional capitalism and the recommendation mechanism, fans believe that their idols need to be protected and others are all enemies [13]. Fans' collective emotions can harm athletes' mental health. They not only criticize the athletes' performance in the

sports field, but also completely deny the athletes' personalities. This kind of behavior threatens athletes' mental health and creates an unhealthy atmosphere on the Internet [14].

Existing research has focused on online fandom and the effect of algorithms on amplifying emotions. Research into online fandom culture has explained how social media recommendation mechanisms have instigated fans' emotions and how fans take irrational actions as a group [13]. Research in China has proved that the fan culture has been constructed into a type of algorithmic culture [15]. But the scope is limited: many heated topics or types of idols—for example, athletes and virtual characters—are not included in fandom research. The research relies on autoethnography but lacks quantitative data. Moreover, research by Gao et al. and Goldenberg et al. has discussed collective emotion amplification and the algorithm's role in amplifying collective emotions, but it mainly focuses on political or informational contexts, so that further insights into the entertainment field are still needed [16, 17]. Thus, this research aims to bridge the gap in existing literature and draw more attention to the effect of social media on raising collective emotions in the fandom of the Chinese table tennis team.

3. Methodology

3.1. Selection of case and platforms

This research selects the case of the fandom of the Chinese National Table Tennis Team. This has been a heated topic on Chinese social media platforms in recent years, especially when popular table tennis events are held. Numerous posts and comments expressing distinctive opinions can be found on multiple platforms, so the samples are adequate. The fandom of the Chinese National Table Tennis Team is a representative case to study collective group mentality because the fans' speeches and actions are highly emotional, including comparing the athletes, controlling opposing comments, and attacking certain people personally. Specifically, this research chooses the most heated incident in May 2026: the General Administration of Sport of China pointed out at a conference that the National Table Tennis Team has been the "severely affected area" of fandom culture, stating that this phenomenon must be addressed. This case is the latest issue that has sparked polarized discussion on social media. Weibo is a platform with a large number of users and a distinct mechanism for ranking heated topics, and it is reliant on algorithmic recommendations. Meanwhile, Weibo is a virtual gathering place for fandoms. All these conditions make Weibo a suitable platform for studying algorithmic recommendations and collective emotions and behaviors.

Unlike Weibo, which mainly focuses on heated societal events, RedNotes' recommendation system is more personalized and based on users' interests. RedNotes contains longer passages, allowing detailed expression and deep insights into a certain issue. Due to the interest-based recommendation system, online communities are more likely to form on RedNotes, bringing together people with similar views and thereby reinforcing the echo chamber effect. Weibo and RedNotes represent two different kinds of social media platforms. While Weibo emphasizes the popularity and timeliness of a topic, RedNotes focuses on satisfying personal preferences and promoting ongoing discussions. Together, they enable this research to understand the case comprehensively and analyze different voices.

3.2. Sampling strategy

This research employs purposive sampling. Certain keywords—Administration of Sport governs fandom of National Table Tennis Team—are determined for searching posts. From Sina Weibo and

RedNotes, the top 20 recommended posts are selected, respectively.

3.3. Content analysis

A scale from 1 to 5 is set up to measure the tendency of the posts, with 1 representing an extremely negative stance (opposing the governance of fandom), 3 representing a neutral or undetermined stance, and 5 representing an extremely positive stance (supporting the governance of fandom). Each post, either from Weibo or RedNotes, is assigned a score. Next, the number of posts with each score is counted, and three graphs are drawn—one for Weibo, one for RedNotes, and one for the two platforms combined.

For the analysis of comments, six posts are selected from each platform and coded into supportive, neutral, and critical. The top 20 comments are analyzed (if the number of comments is less than 20, all the comments are analyzed). The comments are analyzed using content analysis and labeled as agreement, disagreement, emotional expression, sarcasm, and fan identity.

3.4. Privacy protection

This research only analyzes the contents of posts and comments but does not publicize account information at all, protecting users' privacy to the greatest extent.

4. Results & findings

4.1. Distribution of post stances

The scores of the posts on Weibo, RedNotes, and two platforms in total are shown in Figure 1-3, respectively:

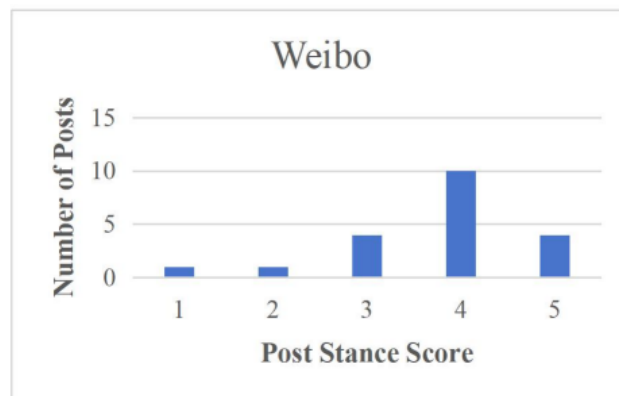


Figure 1. Distribution of post stance scores on Weibo

1 = strongly oppose the regulation of fandom culture; 5 = strongly support the regulation. On Weibo, people's stances range across every score from 1 to 5, although the overall tendency is toward supporting the regulation of fandom. Amongst them, half of the posts are scored 4, which means they have a supportive tendency but no extreme speeches; the number of extreme supportive posts is greater than that of opposing ones.

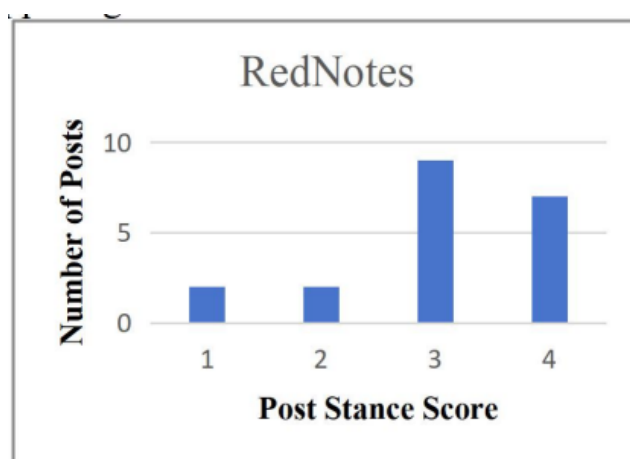


Figure 2. Distribution of post stance scores on RedNotes

Different from those on Weibo, no posts on RedNotes are scored 5, and most posts remain neutral or offer objective analyses of the whole case without indicating any personal biases. Still, there are more supportive voices than negative ones on RedNotes.

In general, most posts on both platforms are either neutral or positive, and the overall tone is reasonable; positive voices consistently outnumber negative ones regarding the regulation of table tennis fandom.

4.2. Characteristics of user comments

The comment sections on the two platforms exhibit noticeable differences in both emotional intensity and interaction patterns. On Weibo, under the post with a supportive tendency and emotional expression, the stance of comments is identical to the post: they support the regulation of fandom; some comments are emotional venting, teasing, or abuse of the athlete. However, under a post with a supportive tendency but rational analysis, the comments do not always follow the post's opinion and may contain emotional teasing. Under news posts that objectively present the facts, the comments still show a clear tendency, with some suggesting methods for regulation, and others either supporting or opposing the measures.

On RedNotes, under the rational analysis and criticism of fandom, the comments take a similar stance, including additional factual narratives, but contain no extremely emotional expressions. Under the slightly emotional analysis that insists regulating fandoms cannot eliminate existing problems, comments take similar stances and raise new points in the discussion. Under the post with rational tones and support of regulations, the comments are contrarily critical, but they are insightful analyses instead of outputs of extreme emotions, and the comments all have similar viewpoints. Under the post holding the opposing view, the comments oppose the regulations in a reasonable tone, arguing that the current situation is not caused by fandom, and that the capital operation behind table tennis actually needs a fandom culture. Under the post of objective discussion, the comments also hold neutral stances, complementing deeper analysis or praising the insightfulness of the author.

4.3. Platform differences

The comparison between Weibo and RedNotes reveals significant differences in both content characteristics and patterns of public discussion.

On Weibo, the most heated posts are all analyzing or criticizing fandom and supporting the government (some, scored 5, contain verbal attacks toward fans and a certain athlete). A few posts hold the opinion that the authority is useless or it's unreasonable to attribute the chaotic phenomena to the fandom. In addition, several posts, scored 3, objectively showcase the news but do not contain any comments. Compared to Weibo, RedNotes contains longer, more rational analyses and objective narratives, and the timeline is longer. Moreover, the analyses are more insightful, often not merely supporting the government but also mocking it, with some arguing that the government itself is the root cause of fandom.

5. Conclusion

This study focuses on the case of the fandom of the Chinese National Table Tennis Team to examine the effect of algorithmic recommendation on people's emotions. Through purposive sampling, 20 posts were selected from each platform (Weibo and RedNotes), and from these, 6 posts were chosen for comment analysis, with the top 20 comments on each post being examined. The results reveal that netizens generally tend to support the regulation of fandom or at least have a clear tendency; however, among the supportive posts, rational voices dominate, indicating that extreme emotions are not obviously amplified. Thus, these results contrast with the initial theoretical hypothesis.

The sample is very small, so the result does not represent the common situation. In addition, the stances of some posts are hard to identify using a 5-point scale, because they may lie between 4 and 5, which means they are emotional but not very extreme. Future studies may increase the sample size, use 7-point or even 9-point scales to more precisely quantify the stances of the posts, and further examine whether people exhibit extreme collective emotions across different cases.

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