A Study on the Impact of "Flaming" on Content from "A Crocodile Who Will Die in 100 Days"

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Abstract

This study is aimed at capturing the impact of flaming generated through social media on content by Sentiment Analysis and Key Graph Analysis. The analysis and discussion clarify that content that has been under flaming will not stop being criticized for a long period of time, and that being flaming experience itself will be consumed as content.

Keywords: Sentiment Analysis, Key Graph Analysis, ML-Ask, SNS, Flaming.

Introduction

This paper uses the comic strip "A Crocodile Who Will Die in 100 Days," which was posted mainly on Twitter[i], to study the prevalence of flaming content on social networking sites and the associated emotional movement. The comic strip "A Crocodile Who Will Die in 100 Days" was updated daily by comic artist Yuki Kikuchi on Twitter for 100 days, from December 12, 2019, to March 20, 2020.

"A Crocodile Who Will Die in 100 Days" was promoted for commercial deployment shortly after it recorded the highest number of "likes" on Twitter in Japan's history. Therefore, both the content and the product were widely recognized, and it can be said to have succeeded in attracting the attention of the AISAS model[ii] of Internet consumption behavior. However, the trending that briefly attracted favorable attention from an unspecified number of people turned overnight and got under the flame, in which attacks and criticisms flooded in from an unspecified number of people in a short period because of the promoted. In this respect, it is worth noting that it is rare for content that was both trending and flamed not to lead to successful sales.

Previous Research

This thesis focuses on trending and flaming on social networking services (SNS). This chapter describes the positioning of this thesis regarding previous research on flaming on the Internet in an SNS.

attitudes and behavior in order to develop marketing strategies appropriate for each stage.

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[i] A social networking service launched by Obvious (Twitter, Inc.) in July 2006 and used by 217 million users per day as of April 2021 [1].
[ii] Proposed by Dentsu in 2004. The acronym stands for Attention, Interest, Search, Action, Share, and is used to understand consumers'

Concerning flaming, defined flaming as "a requirement that a large amount of criticism is written on CGMs such as social media in a short period of time and that the criticism spread to multiple online services rather than only to a single online service" [2], "A Crocodile Who Will Die in 100 Days" which meets the above definition because the criticism spread across various media, including Twitter, in a short period after the promotion for commercial deployment.

The previous research also addressed actual flame cases [2], this paper, similarly, addresses a real flame case. Approaches to flames have been attempted by categorizing Tweets and aggregating them in time series. This paper differs from the previous study in that it focuses on a single case of "A Crocodile Who Will Die in 100 Days" and uses Sentiment Analysis and Key Graph Analysis to study the flames. The research on the presence of others on SNS has indicated the desire to examine the factors that cause flaming by content and to elucidate the processes that lead to flaming [3]. Since this paper quantitatively analyzes and examines the flaming of content, this paper is academically and socially significant research that also contributes to the clarification of the process.

Purpose

The purpose of this paper is to clarify the impact of flaming on content. This paper shows how flaming have affected peoples' emotions.

Methods

This chapter describes the data, sentiment, and Key Graph Analysis used in this thesis.

This paper collected a total of 172,562 Tweets which including either or both the official name of the subject, "*100 日後に死ぬワニ*," the abbreviation of the subject, "*100 ワニ*," and the author of the subject, "*きくちゆうき*." Tweet data were collected from two periods, based on the events and Google trends. before the film's release (April 1, 2020) to (June 30, 2021) and From around the start date of the film release (July 1, 2021) to around the end date of the film release (August 8, 2021). Sentiment Analysis and Key Graph Analysis are conducted on the Tweets.

Sentiment analysis

Sentiment Analysis analyzes the Tweet data for each time series, and quantitatively quantifies the emotional fluctuations seen in the user's transmissions.

Sentiment Analysis using ML-Ask is a Sentiment Analysis method that focuses on a wider range of emotions. Emotions are classified into 10 categories using the Emotional Expression Dictionary: "sadness", "shame", "anger", "dislike", "fear", "surprise", "like", "excitement", "peace", and "joy" [4].

Key Graph analysis

Key Graph Analysis analyzes the same Tweet data for the same period as the Sentiment Analysis, to objectively visualize the information and impressions that users were transmitting.

For the analysis, the Dice coefficients based on equation (1).

$$DSC(A,B) = \frac{2|A \cap B|}{|A| + |B|} \qquad (1)$$

Results

Sentiment analysis results

Using the collected data, Sentiment Analysis was conducted for each period, and the percentage of each sentiment was calculated for each period. This was done to make it easier to compare the transition, since the number of Tweets differed from period to period. Fig.1 below show a graphical summary of the percentage transition of each estimated emotion.
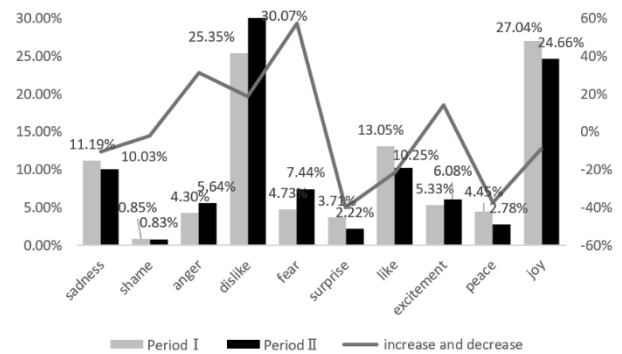

Fig. 1: Sentiment Analysis (April 1, 2020 - June 30, 2021, and July 1, 2021 - August 8, 2021)

Key Graph analysis results

In this chapter, the clusters that can be read from the Key Graph Analysis results are indicated by numbers in each

figure to clarify what kind of context was present in the
Tweets.

Fig. 2: Tweet data Period I (April 1, 2020 - June 30, 2021)

(i)   Information and reaction about the film of this content.

(ii)   Negative tweets about this content book.

(iii)   Ridicule this content. E.g., compared film of this content with other popular work box-office ("Demon Slayer" (Koyoharu Gotouge)). The café of this content that closed within three days of its opening. The merchandise of this content was sold for ¥23 in a crane game. The turned-out shill are existing in the distribution of this content.

(iv)   Reactions and ridicule a lawsuit filed by the author of this content in response to a defamation statement.

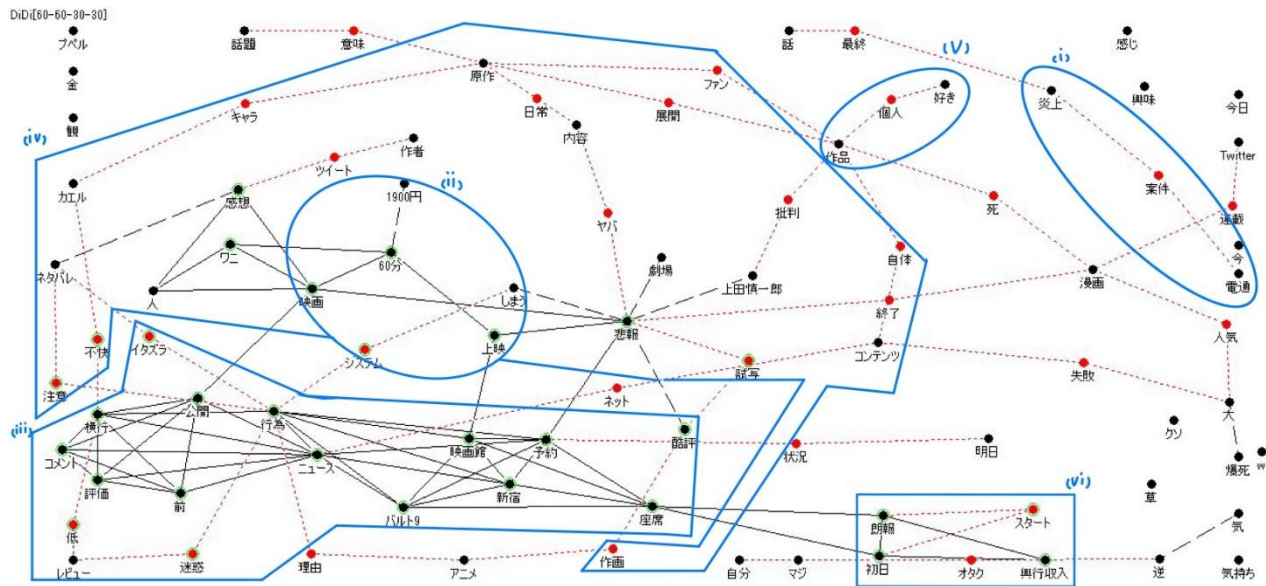(v)   Information and reaction to this content being hot topic about.

Fig. 3: Tweet data Period II (July 1, 2021 - August 8, 2021)

(i)   Reaction to the flaming by the alleged relationship between this content and Dentsu.

(ii)   Information and reaction to the fact that the film for this content has a running time of 60 minutes and the price of the film ticket is ¥1,900.

(iii)   Tweets about trolling behavior, such as rampant low-rated reviews before the film's release, or reservations without intent to see the film after its release.

(iv)   Information and reactions about this content film.

(v)   Positive comments on the film of this content.

(vi)   Information and ridicule of the box-office revenue for the film in this content.

Discussion

Combining the data obtained from the results of the Sentiment Analysis and the results of the Key Graph Analysis, this section discusses the emotional swings in each period.

Emotional movement from Period Ⅰ (Before the film's release) to Period Ⅱ (Film release)

In the Tweet data, " dislike ", "fear" is increased and the "like" "joy" is decreased can be interpreted from the clusters of vandalism and criticism generated for this content film (Fig.2, Fig.3). As for the increase in "fear", it is likely that it is caused by the uncertainty of the film adaptation.

The results of the Sentiment Analysis and Key Graph Analyses suggest that the reason why the high ratio of joy is occurring in the tweet data may be due to the content

of the flaming. The flaming began on March 20, 2020, and even though the film's release date is July 9, 2021, more than a year later, the effects of the flaming remain in a different form. The flaming period was unremarkable because it was seen as an issue to be discussed, but since then, it has become content as "flaming content," and there is a segment of the population that gleefully watches court cases brought against harassment and defamation by the author (Fig.3). This includes cynicism and sarcasm.

Conclusions

The purpose of this paper is to visualize the "A Crocodile Who Will Die in 100 Days," flaming, which is a flaming period, and to understand how the flaming have affected peoples' emotions.

The study found that the analysis revealed the following about the impact of flames on content

Once content goes up in flaming, it has become clear that content that has been under flaming will not stop being criticized for a long period of time, and that being flaming experience itself will be consumed as content.

This paper does not fully investigate the bias of the Tweeting users. In the case of a specific flaming, it is possible that the noisy minority phenomenon is being caused [5]. This phenomenon is the diffusion of information only by users belonging to a specific community.

Therefore, it is necessary to quantitatively evaluate whether the information spread at the time of the flaming incident is biased toward users in a certain community by investigating user bias using KL Divergence, as in the previous study.

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