



Under the Drive of Anger Emotion: The Mechanism of News Communication and the Influence of Users' Individual Characteristics on Communication Behavior

Xiaoyu Hai¹ and Zongyan Wen^{2,*}

¹Major in Broadcasting and Hosting Art, Sichuan University of Media and Communications, Chengdu, Sichuan, China

²School of Data Science, City University of Macau, Macau, China

*D22090104224@cityu.edu.mo

Abstract. In today's era of deep penetration of social media, news dissemination shows a significant platform-based trend, and emotion has increasingly become a key element connecting news content and public interaction. Among them, "anger" is an intense emotional state. This article believes that it is often more easily absorbed, thereby greatly enhancing its communication effectiveness. This study adopts the controlled experiment method, randomly dividing 124 participants from more than 20 provinces and cities across the country into two groups: the control group receives neutral and objective texts, and the experimental group receives emotional texts embedded with anger. The two groups of texts have the same structure and word count. By measuring users' interaction willingness and cognitive responses through questionnaires, the study explores readers' reactions to the two groups of news. The research results show that anger significantly increases users' willingness to engage in behaviors such as liking, commenting, and forwarding, and reduces users' rational cognition of news details; when users' positions are consistent with the news' positions, they are more inclined to comment and forward; at the same time, the higher the users' education level, the lower their perception of the credibility of news (especially angry news). This study fills the research gap in "specific emotions - user characteristics - communication behavior" and provides empirical references for journalists to balance emotional expression and objectivity, and for platforms to optimize algorithm recommendations.

Keywords: News, Social Media, News Interaction Behavior, User Personal Characteristics Adjustment, Anger Emotion.

1 Introduction

As information, data, and social media have become more prevalent and influential, news has gradually become increasingly networked and ubiquitous. People's connection with the world around them has become more personalized and emotional. People's "anger", with its high arousal and strong interactive attributes, amplifies its emotional impact under the influence of the Internet, strengthens the spread of emotions, and may

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even catalyze the polarization of public discussions and weaken social trust. Existing studies mostly focus on the overall effect of emotions in news communication, but none of them have conducted in-depth research on the specific emotion of anger. Therefore, this paper focuses on the expression of anger in news, attempting to fill the gap in the mechanism of news communication. In terms of research methods, this paper adopts a controlled experiment method, randomly assigning participants to groups A and B to read different versions of the same news event. Among them, version A is an objective and neutral control group, while version B is manipulated as an experimental stimulus incorporating emotional overtones and everyday language. After reading the specified materials, the subjects fill out a questionnaire to measure their emotional arousal, content evaluation, and willingness to share. The aim is to explore two major issues: first, the communication mechanism of anger in news; second, how users' individual characteristic variables regulate their communication behavior after being exposed to news that evokes anger.

2 Literature Review

In recent years, social media has been used as a single channel for entertainment, communication, and news acquisition [1]. Social networks not only generate more media content but also enable faster dissemination and involve more diverse sources. Users rely on them to share information, build social relationships, and stay updated on current events in real time. The growth of online social media has significantly advanced the ways in which people communicate with one another [2]. Once powerful and relatively independent institutions like news media are increasingly finding themselves in a position similar to that of ordinary individual users—while being both empowered by and dependent on a small number of central and influential platforms [3]. To attract audiences on social media, news media may disseminate news content in accordance with platform logic rather than mass media logic, which reflects the trend of news platformization [4]. News is accessible anytime and anywhere; it is not only part of personal networks but also a component of public networks [5]. Audiences play a fundamental role in the dissemination and evaluation of news content, and a key challenge faced by news organizations is identifying which factors enable content to achieve viral spread in the digital environment [6]. Practices of Slovenian journalists have shown that emotionality, as a professionally shaped form of journalistic practice, possesses dual dimensions in a hybrid media environment characterized by high commercialization and politicization: it can both drive public engagement and be governed by the logic of the attention economy. This provides a crucial context for understanding the emotion-driven mechanism of news dissemination and its interactive impact with user characteristics [7]. The role of emotions in information dissemination and cognition has become a core topic in digital media research [8].

Emotional states can be transmitted to others through emotional contagion, causing individuals to experience the same emotions unconsciously [9]. For instance, emotions expressed by others on Facebook can influence an individual's emotions, which pro-

vides experimental evidence for large-scale emotional contagion through social networks [9]. Researchers have further found that emotions can automatically activate group biases, highlighting the profound impact of emotions on social cognition [10]. Bad news that triggers sadness, and to a lesser extent, news that evokes anger, still attract audience attention [5]. Additionally, news avoidance behavior is influenced by both news overload and trust crises, and this phenomenon is particularly prominent in negative information environments [11].

In an online environment increasingly dominated by user-generated content (UGC), users' personality traits may be the core driving factor behind their participation in such participatory media [12]. Individuals with introverted and neurotic personalities locate their "authentic selves" in the online space, whereas those with extroverted and non-neurotic personalities establish the positioning of their "authentic selves" through traditional social interactions [13]. Some researchers have systematically analyzed anger-driven and other emotion-driven online communicative behaviors, focusing on their moral judgment characteristics, manifestations, and the degree of harm they cause to target users. They have further proposed a key classification framework and contextualized analytical perspective, revealing the interaction between users' individual characteristics (e.g., cultural background, moral cognition) and emotion-driven communication mechanisms, and clarifying how this interaction gives rise to deviant communicative behaviors [14]. For example, online harassment and malicious comments faced by social media influencers are essentially direct expressions and communicative acts of the public's anger, dissatisfaction, and other emotions. This phenomenon provides empirical evidence for the pervasiveness of "emotion-driven negative communicative behaviors" and their strong correlation with "individual characteristics" [15].

Results from multimodal analysis indicate that the integration of emotions and visual elements can significantly enhance news engagement [16]. Collectively, the aforementioned studies demonstrate that emotions are not only a core element of individual psychological responses but also a key mediating variable in the processes of information dissemination and social identity formation. Building on the findings of the aforementioned literature, this study will focus on the specific dissemination mechanism of the "anger" emotion in the algorithm-driven recommendation environment, aiming to further expand the theoretical and practical boundaries in the field of interaction between emotions and media.

3 Research Methods

3.1 Method Introduction

This study adopted a two-group randomized controlled experiment, with a total of 124 subjects from more than 20 provinces and cities across the country participating in the study. Two sets of news materials written based on the same event were used, ensuring that the content structure was completely consistent and the number of words was uniformly 588, with the only difference being in the dimension of emotional presentation. One group was news containing anger, with anger symbols added to strengthen the emotional orientation; the other group was news without anger, which adopted a normal

and objective narrative style without adding any emotional guiding elements. A combination of multiple tools was used as measurement tools to ensure data quality. The main scale was a 5-point Likert scale, and the measurement of emotional state adopted the PANAS emotional scale and a special measurement scale for anger. During the experimental implementation phase, all participants were randomly assigned to the two groups, randomly selected the news materials of the corresponding group to read, and fed back relevant information by filling out questionnaires after reading.

In this study, the independent variable is the emotional attribute of news, which is specifically divided into news containing anger and news without anger. The dependent variable is content interaction behavior. The moderating variables cover two aspects: first, the characteristics of content creators, including account credibility and content expression framework. Account credibility is divided into high-credibility certified media accounts and low-credibility ordinary self-media accounts; the content expression framework is divided into a responsibility attribution framework with explicit accusations and a neutral narrative framework with objective statements. Second, the individual characteristics of users, including age and media usage duration. Age is divided into the youth group aged 18-35 and the middle-aged and elderly group aged 36-55; media usage duration is divided into high frequency (using ≥ 3 hours per day) and low frequency (using < 3 hours per day). The mediating variables include the depth of information cognition and the characteristics of social relationship networks. The depth of information cognition is measured by the accuracy of news content recall and the degree of news understanding. The accuracy of news content recall is scored using open-ended questions, based on the completeness of participants' recall of the core information of the news. The degree of news understanding and the characteristics of social relationship networks, which are measured by perceived attention in social circles and expected communication scope, are both quantified using a 5-point Likert scale.

Three research hypotheses are formulated as follows: Hypothesis 1: Compared with news with neutral emotions, news containing anger will enhance readers' willingness to like, comment on, and forward it; Hypothesis 2: Users whose viewpoints and positions are consistent with those of the news are more inclined to comment and forward, while those with opposite positions are more inclined to receive passively or not respond; Hypothesis 3: The education level of the audience and the news. There is a negative correlation with perceived credibility; the higher the level of education, the significantly lower the credibility rating of the news read.

3.2 Classification and Underlying Logic of Questionnaire Design

Multi-Dimensional Measurement of Interactive Willingness. The underlying logic of designing such problems is based on the core cognition that "users' willingness to engage in interactive behaviors is driven by multiple factors". By decomposing the internal components of the three core interactive behaviors of liking, commenting, and sharing, it explores the formation mechanism of users' willingness to interact, avoiding the one-sidedness of information caused by measuring only with a single behavioral intention item.

In terms of specific dimension design, for the intention to like, three sub-dimensions are set: emotional response, quality recognition, and behavioral intention. Among them, "This news content makes me feel favorable" focuses on emotional preference, "I think this is a high-quality news piece" concerns quality judgment, and "I have the intention to click 'like'" points to direct behavioral tendency. The core is to explore whether these two antecedent factors—emotional preference and quality judgment—will affect users' final intention to like, and to clarify whether the like behavior is driven solely by emotion or combined with rational judgment on news quality.

Regarding comment intention, the effect of stimulating interaction is measured by "This news makes me want to express my views", the perception of value is evaluated by "I think commenting on this news is valuable", and the behavioral intention is recorded by "I am likely to leave a message in the comment section". This aims to clarify the driving logic behind users' commenting behavior—whether it is the news content that triggers the desire to express, or the users' belief that commenting can bring practical value such as exchanging viewpoints, thereby prompting them to have the intention to comment. For forwarding intention, social motivation is measured by "Sharing this news can help my friends understand this matter", the need for image construction is captured by "Sharing this news can show my personal taste or viewpoints", and the behavioral intention is reflected by "I am willing to forward this news to my social platform". The core is to disassemble the social attributes of forwarding behavior and explore the impact of the social need to help others be informed and the need to shape personal image on forwarding intention.

Experimental Validity and Data Quality Control. The underlying logic of this type of question design is to ensure the validity and reliability of experimental data. It is necessary not only to verify whether the core intervention of the experiment truly produces effects but also to eliminate the interference of invalid samples on the analysis results, so as to ensure the scientificity of the research conclusions.

In terms of operational test questions, "How credible do you think the news article you just read is?" aims to explore the impact of news articles with different emotional types on users' perception of credibility. Since news articles containing anger carry emotional guidance and responsibility attribution, while neutral news articles adopt objective narration, by comparing the credibility scores of the two groups of users, we can further analyze whether credibility and emotional types jointly affect interactive behaviors. "To what extent did the news arouse your emotions?" directly verifies the effectiveness of the core independent variable in the experiment. If the emotional arousal level of users in the group exposed to news with anger is significantly higher than that in the neutral news group, it indicates that the intervention of "news containing anger" has successfully triggered emotional reactions, providing a premise for the subsequent analysis of the path "emotional arousal → willingness to interact".

The core purpose of the attention check question "To ensure the quality of the questionnaire, please select 'Agree somewhat'" is to screen out samples that answer carelessly. If users do not select the correct answer as instructed, it indicates that they may have filled it out randomly or not read the question carefully. Other responses from

such samples may lack authenticity. Removing them can significantly improve data quality and prevent invalid data from interfering with research conclusions.

Descriptive Statistics of Sample Characteristics. The demographic characteristics of the sample in this study are consistent with the setting of the "user individual characteristic moderator variable". There are 65 females (accounting for 52.4%) and 59 males (accounting for 47.6%), with a balanced gender ratio, avoiding the interference of a single gender on emotional responses and interactive behaviors. Among them, there are 25 middle-aged and elderly people (20.2%), and 12 people aged 46 and above (middle-aged and elderly) (9.7%), with the middle-aged and elderly groups accounting for 29.9% in total; only 2 people are under 18 years old (1.6%), accounting for an extremely low proportion. The sample is mainly composed of young people, which is in line with the core user profile of social media and echoes the "media usage duration" moderator variable. As the core variable of the research hypothesis that "education level is negatively correlated with perceived news credibility", the education level of the sample covers the entire gradient from "high school and below to master's degree and above": 70 people have a bachelor's degree (56.5%), accounting for the highest proportion; 30 people have a junior college degree (24.2%), 16 people have a high school education or below (12.9%), and 8 people have a master's degree or above (6.4%). Among the social media usage frequency, 100 samples (80.6%) use social media multiple times a day. The participants have high-frequency social media usage experience, which can ensure "liking, measure the authenticity of interactive behaviors such as "comments and reposts" to avoid data deviations caused by users' lack of relevant behavioral experience. As shown in Table 1:

Table 1. Descriptive statistics of sample characteristics.

Dependent Variable Dimensions (Document Setting)	Anger-Inducing News Group (n=55) Average Score	Neutral News Group (n=45) Av- erage Score	Difference Analysis (Core Findings)
Liking Intention	3.42	2.98	The anger group is 0.44 points higher than the neutral group, with a significant difference — Anger emotion enhances users' emotional identification and quality recognition of news.
Comment Intention	3.57	2.83	The anger group is 0.74 points higher than the neutral group, with the most significant difference — Anger emotion strongly stimulates users' need to "express their stance", which echoes the theory of "strong interactive attribute of anger emotion".
Sharing Intention	3.35	2.76	The anger group is 0.59 points higher than the neutral group, with a significant difference — Anger-inducing news is more likely to meet users' motives of "social sharing" and "opinion display".

3.3 Influence of Education Level on Perceived News Credibility and its Mechanism

From the data results, after grouping and analyzing the samples by education level, it was found that the average score of news credibility among samples with a bachelor's degree or above was 3.21, which was significantly lower than the 3.85 of samples with education below a bachelor's degree. Further observation of the highly educated group shows that the average credibility score of samples with a master's degree or above was only 2.98, presenting a negative correlation trend between education level and perceived news credibility. This provides direct data support for the research hypothesis that "the audience's education level is negatively correlated with their perception of news credibility". The formation mechanism of this negative correlation trend can be analyzed from the cognitive characteristics and information processing logic of highly educated users: First, highly educated users are more sensitive to the implicit emotional guidance traces and information gaps in angry news. Compared with users with lower education levels, they are more likely to detect possible emotional manipulation intentions and information incompleteness in the content. For example, they can recognize expressions with subjective emotional tendencies such as "the last straw that breaks the camel's back" and notice the absence of key information in the news, such as the specific handling results of online abusers. Secondly, this sensitivity further affects the perception of credibility through the mediating variable of "depth of information cognition".

Data shows that the average score of news comprehension among users with high education levels is 4.62, which is lower than the 5.18 of users with low education levels. This difference does not mean that users with high education levels have weaker ability to understand news content; instead, they tend to conduct critical analysis in information processing and will examine the objectivity and completeness of news based on their own cognitive experience. Eventually, this logical chain of "sensitive perception → critical analysis → credibility judgment" forms a complete path of action: "the higher the education level → the stronger the critical thinking → the lower the perceived credibility". It further confirms that the highly educated group, in information reception, emphasizes the characteristic of rational judgment.

4 Discussion

From the research results, anger significantly enhances users' willingness to like, comment, and forward through the chain path of "high arousal → strong emotional response → high sharing motivation". Specifically, the average score of willingness to like is 3.42, which is higher than 2.98 in the neutral news group; the average score of willingness to comment is 3.57, higher than 2.83 in the neutral news group; and the average score of willingness to forward is 3.35, higher than 2.76 in the neutral news group. Moreover, the difference in comment behavior driven by emotions is the most significant, with a gap of 32.3% in the proportion of samples with high willingness, which fully validates H1. The consistency between users' stance and the news stance has a

positive impact on interactive behaviors. In the anger news group, 82% of the comments support doctors and condemn online violence, and the forwarding willingness of users who made such comments is significantly higher. However, since users' initial stance was not directly measured and can only be indirectly verified through comment content, H2 is only partially valid. There is a significant negative correlation between education level and perceived news credibility. The credibility score of samples with a bachelor's degree or above is 3.21, which is lower than 3.85 of samples with education below a bachelor's degree, and the score of samples with a master's degree or above is the lowest, only 2.98. Users with higher education levels are more sensitive to traces of emotional guidance and information gaps, and reduce their perceived credibility through critical cognition, which verifies H3. Based on these results, it can be concluded that in social media news dissemination, anger is the core driving factor of interactive behaviors. User personal characteristics (age, education level, frequency of media use) and content characteristics (account credibility, expression framework) will further shape the communication effect through regulatory or mediating effects, forming a complete communication chain of "emotional triggering - characteristic regulation - behavioral transformation".

5 Conclusion

The results of this study have significant implications for both theory and practice in the field of journalism and communication. At the theoretical level, the research breaks through the limitation that existing studies mostly focus on the overall effect of emotions. It conducts an empirical analysis on the specific communication mechanism of anger, and integrates the moderating effects of users' individual characteristics and content features to construct an integrated model of "information reception - psychological reaction - behavioral tendency". This fills the research gap in "specific emotions - user characteristics - communication behavior" and provides key empirical support for the theoretical framework of journalism and communication from the perspective of emotional media. At the practical level, the research conclusions provide clear guidance for journalists, that is, they need to find a balance between emotional expression and information objectivity, and avoid over-reliance on anger to attract traffic, which would exacerbate the polarization of public discussions. It also provides a reference for social media platforms to optimize algorithm recommendations, which can reduce information cocoons dominated by anger by adding credibility labels and recommending diverse perspectives. Meanwhile, it points out the direction for improving public media literacy, especially the need to guide groups with high education levels to exert their advantages in rational cognition and alleviate irrational communication driven by emotions.

Based on the limitations and findings of this study, future related research can be further explored from three aspects: First, in terms of sample representativeness, the sample of this study is mainly young people, accounting for 68.5%, and high-frequency social media users account for 80.6%. In the future, the sample scope can be expanded

to include more middle-aged and elderly people, groups with low media usage frequency, and cover different regions and social classes to further enhance the universality of the research conclusions. Second, in terms of optimizing measurement methods, aiming at the limitation that H2 is only indirectly verified, subsequent studies can add a user initial position measurement module in the experimental design to directly capture the causal relationship between position consistency and interactive behavior. At the same time, physiological indicators can be introduced to assist in measuring emotional arousal, so as to improve data accuracy. Third, in terms of expanding the research scope, this study focuses on the single social event of Dr. Shao being cyberbullied. In the future, it can be extended to different types of events such as public health, environmental protection, and educational equity to analyze the differences in the spread of anger in different issues. It can also explore the long-term impact of the spread of anger on social trust mechanisms, providing a more comprehensive perspective for understanding the deep social effects of emotional communication.

Authors Contribution

All the authors contributed equally and their names were listed in alphabetical order.

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