



Analysis of the Types, Transmission Mechanisms, and Relief Methods of Negative Emotions on the Internet

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Abstract. With the popularization and development of the internet, cyberspace has become an important part of citizens' daily life. The spread and diffusion of negative emotions on the internet have a significant impact on social stability and individual mental health. This paper analyses the main types of negative emotions on the internet, such as anger, fear, anxiety and sadness, and their causes. This paper discusses two kinds of negative emotion transmission modes on the internet, namely, umbrella transmission and circle transmission. It puts forward some effective strategies to alleviate negative emotions on the internet, such as identifying and intervening in key nodes, building multiple interactive platforms, strengthening emotional identification and feedback, and promoting the dissemination of positive content. Through the implementation of these strategies, we can effectively manage and dredge the negative emotions of the network, and promote the positive and healthy development of the network environment.

Keywords: Negative Emotion, Transmission Mechanism, Umbrella Dissemination, Circle-Layered Dissemination

1 INTRODUCTION

In recent years, cyberspace has increasingly become an essential part of civic life. According to the 52nd Statistical Report on the Development of internet in China issued by China internet Network Information Center (CNNIC), by June 2023, the number of internet users in China had reached 1.079 billion, an increase of 11.09 million over December 2022, and the internet penetration rate had reached 76.4%. These data show that the scale of internet users in China has exceeded 70%, and cyberspace has gradually integrated into the daily life of citizens. On the internet, the public's discussion of public opinion events is always accompanied by the spread of emotions. After the occurrence of public opinion events, the internet is full of various emotions, which confront each other and push public opinion to a climax. Individual emotions are integrated into collective experience in interaction, gradually reaching emotional consensus, and pushing public opinion events to a climax in the form of group pressure [1]. During this period, internet rumors are accompanied by violence. It can be said that the harm has already happened at the moment of public opinion crisis, and public sentiment plays an important role in the development of public opinion. The transformation of the way of

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obtaining and disseminating information in the network environment has provided great convenience for netizens to sharply question, express dissatisfaction and attack each other on the problems in the network public events. Netizens express various opinions while forming complex and diverse negative emotions, which are often very strong, easy to spread and unstable, and even produce the effect that emotions are greater than the facts themselves once they are not well controlled. This will undoubtedly aggravate social contradictions, so we must attach great importance to the guidance of negative emotions of netizens.

2 TYPES OF NEGATIVE EMOTIONS ON THE INTERNET

2.1 Anger

Anger is a strong emotion, usually caused by injustice, deception or injury. On the internet, the expression of anger is often more intense, such as abuse, attacks and so on. Adverse stimulation mainly comes from two aspects. The first aspect is from the events that hurt their own interests, in which the relevant demands of netizens are not taken seriously or treated unfairly. The second aspect of the incident has nothing to do with itself, but because the incident violates social morality and laws and regulations, netizens cannot tolerate it. For example, people's anger at those who admit to violating morality or at the unequal treatment of others is a kind of emotional moral anger. The anger of netizens is easily infected and spread, and the anger of individual netizens is repeatedly spread, exchanged and interacted in cyberspace, which often evolves into public anger, thus producing an overwhelming force to influence the direction of public opinion.

2.2 Fear

Fear is an emotion that arises from facing danger or uncertainty. Fear is often caused by a lack of processing and a lack of strength and ability to get out of scary situations. Fear is more contagious than any other negative emotion. In the network environment, all kinds of emergencies spread rapidly on the network, if these network events have problems related to the netizens themselves but cannot be solved in a short time, it will easily lead to the fear of netizens, and the fear of netizens will lead to the panic of the whole society after continuous accumulation and diffusion. In addition, the spread of internet rumor is more likely to trigger the generation and spread of fear among netizens. Especially after some public events, health events and natural disasters, netizens did not get timely information. At this time, the rumor will soon be generated and spread, thus causing panic among netizens [2].

2.3 Anxiety

Anxiety is an emotion that arises from worrying about the future. On the internet, the expression of anxiety is often more obvious, such as tension, worry and so on. Anxiety

is a complex emotion, a combination of fear, tension and other emotions. The combination of its emotional components is not fixed, but varies from person to person and from situation to situation. Anxiety caused by social reality is mainly influenced by risk factors, threat factors and challenge factors in the real society. At present, our country is in the period of social transformation, all kinds of social contradictions accumulate, the pressure and uncertainty of real life go hand in hand, and people's anxiety is gradually rising. With the development of the internet, various network media have become an important channel for netizens to express their anxiety. The anxiety of netizens is mainly expressed by means of exaggeration, irony, rhetorical questions and helplessness, which can often be recognized by the majority of netizens.

2.4 Grief

Grief is an emotional experience that stems from loss or helplessness. In the network world, the expression of sadness is often more profound and extensive, manifested in melancholy, sadness and other forms. Grief is more than a simple sense of loss. It also involves longing for the good memories of the past, despair about the wishes that may not be fulfilled in the future, and a sense of powerlessness about the current situation. The anonymity and depersonalization of the online environment make people express their grief more directly and sincerely, sometimes even without disguise. In our country, with the intensification of social competition and the challenge of individual psychological endurance, people share their sad stories on the internet to seek resonance and comfort. These stories may involve the frustration of personal life, the loss of loved ones, the failure of love, etc. They spread through social networking platforms and arouse wide resonance.

3 TRANSMISSION MECHANISM OF NEGATIVE EMOTIONS ON THE INTERNET

3.1 Classification of Transmission Mechanisms

The transmission mechanism of negative emotions on the internet can be distinguished according to the structure and characteristics of information transmission. Umbrella dissemination and circle dissemination are two different mechanisms, and their main difference lies in the path and scope of information dissemination [3].

As shown in Figure 1, the pattern of umbrella dissemination is similar to that of traditional broadcasting, with information spreading from a central point to the periphery, just as the umbrella ribs extend outward from the top of the umbrella. In the online environment, this may mean that a major source of information publishes a message, which is then received by its followers and further disseminated to their followers, forming a hierarchical diffusion path. In this mechanism, the scope of information dissemination is wider, which may cover different social circles and groups. As shown in Figure 2, the mechanism of circle communication pays more attention to small groups or communities in social networks. Information travels within specific circles, which

are often formed based on shared interests, values, or cultural backgrounds. In circle communication, the flow of information is more closed and centralized, usually between members within the circle, rather than spreading widely to the outside. In this mechanism, the depth and interaction of information dissemination may be higher, but the breadth may be relatively limited.

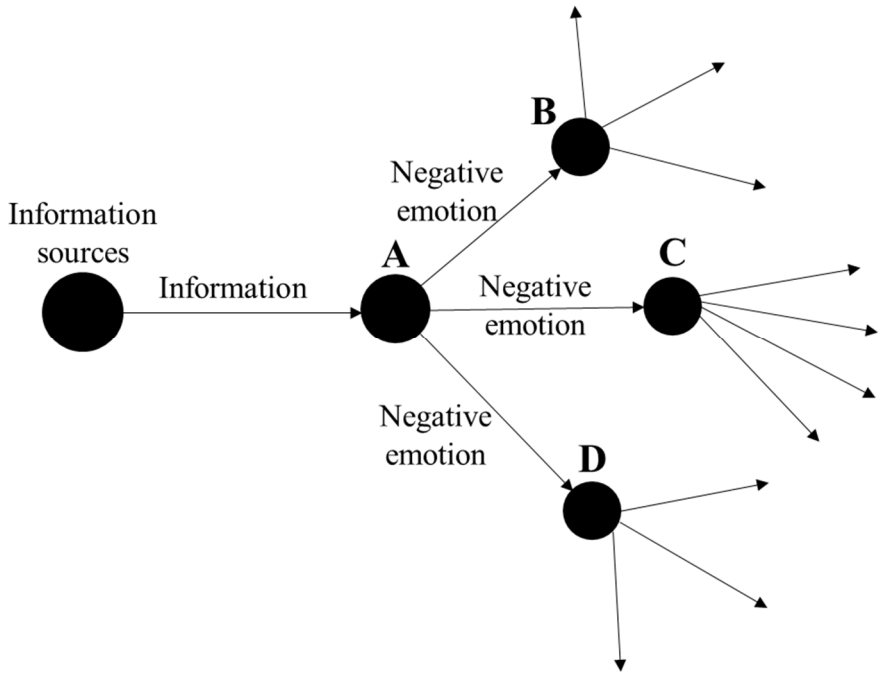


Fig. 1. Illustration of the umbrella dissemination mechanism (figure credit: original)

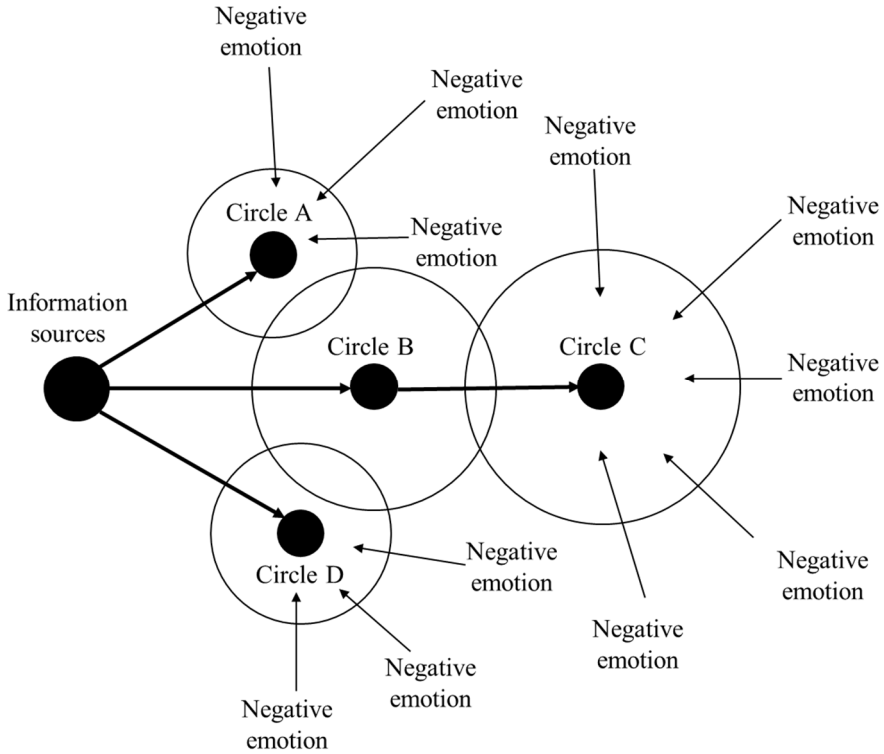


Fig. 2. Illustration of the umbrella dissemination mechanism (figure credit: original)

3.2 Umbrella Dissemination

Generally speaking, the umbrella transmission mechanism of negative emotions in network public opinion includes three forms: single-point outbreak, multi-line transmission and multi-point differentiation.

Single point burst. Single-point outbreak refers to the spread mechanism of negative emotions on the internet from a specific starting point. This pattern usually starts with a key source of information or event, such as a popular post on social media, a news report, or a public figure's speech. Once this information is released, it can quickly attract a lot of attention and be widely disseminated in a short time. This mechanism of dissemination is similar to news dissemination in traditional media, but faster and wider, because the instantaneity and interactivity of the network platform enable information to reach a large number of users in a short time.

Multiline propagation. Multi-line transmission refers to the mechanism of simultaneous transmission of negative emotions through multiple channels or paths. In this mode, the initial information point may trigger multiple secondary propagation points, each of which may generate more propagation branches. This way of spreading forms

a complex network where information can flow between different social media platforms, forums, chat groups, etc. Multi-line transmission makes the transmission of negative emotions more difficult to control and predict, because it does not depend on a single source of information or transmission path [4]. As time goes on, some transmission paths may gradually weaken because of the loss of attention, while new transmission paths may suddenly rise because of new events or topics. This dynamic change makes the network emotional communication show a constantly evolving feature, which puts forward higher requirements for monitoring and managing network public opinion.

Multi-point differentiation. Multi-point differentiation refers to the pattern of differentiation and variation of negative emotions at multiple points in the process of transmission. In this mode, the initial information may be interpreted and responded differently according to different social groups, cultural backgrounds or personal understandings. These different interpretations may spread further in their respective social circles, leading to the diversification of emotional expression and information content. Multi-point differentiation increases the complexity of network public opinion, because it involves the personalized processing and re-creation of information, making the same event may trigger different emotional reactions and discussion focus in different network communities [5].

3.3 Circle-Layered Dissemination

There is a phenomenon of circle stratification in the spread of negative emotions of network public opinion. Netizens with different views and emotions achieve emotional aggregation through virtual social circles, and the intersection of circles and the change of topics also bring about the differentiation and convergence of negative emotions of netizens.

Emotional diffusion. Relying on the emotional circle of social networks, the spread effect and scope of negative emotions within the circle have been greatly enhanced. However, due to the closeness and privacy of Wechat platform, the emotional circle of Wechat is more inclined to single-core communication, and the frequency of communication is lower. Users in the center of the circle have a higher voice, and their emotions are more likely to affect other people's cognition. Compared with the closeness of Wechat platform, the openness of micro-blog has brought about the improvement of public opinion visibility. Different individuals link their social networks through sharing behaviour, the diffusion speed of public opinion is further accelerated, the amount of information is gradually increased, the number of participants is greatly increased, and the main circles of public opinion discussion can communicate and dialogue with the external circles, so as to make the negative emotions flow more smoothly. Form a multi-core resultant force to spread outward [6].

Emotional aggregation. On the social network platform, netizens often have their own virtual social circle, and negative emotions rely on the process of "relationship network" diffusion, which will also promote the formation of interactive virtual social groups. The interests and values of the members of the virtual social group are mostly

similar, which makes the same social circle have a strong sense of identity with emotions and information. Emotional information spreads rapidly through the interaction between the relationship nodes, and is forwarded, concerned and commented by different nodes layer by layer, causing a large number of nodes to respond, thus promoting the aggregation of emotions within the virtual social group. In addition, sentiment aggregation may also be affected by algorithmic recommendation systems [7]. Algorithms on social platforms tend to push content that users may be interested in, which to some extent encourages users to be exposed to more information consistent with their emotions, thus enhancing the effect of emotional aggregation.

Circle crossing. Social sharing is a major feature of emotions, and netizens often use social media platforms to forward event-related information and spread negative emotions in their social circles. However, due to the complex relationship network of virtual social space, netizens are not fixed in a social circle, but intersect with many different circles of netizens at the same time, which brings the possibility of circle intersection. In addition, the intersection of issues also makes the emotional circles converge to a certain extent, which makes the emotional circles intersect. Based on this, many opinion leaders analyze and interpret from multiple perspectives, and different issues trigger more circles of discussion, thus forming different circles of public opinion around related issues. Subjects at the same level form an interactive circle of opinions, and around the attitudes and emotions of opinion leaders, netizens spontaneously aggregate and differentiate their opinions, and as ordinary nodes, netizens will also form an emotional interactive circle at the same level in the process of public opinion fermentation.

4 RELIEF METHODS OF NEGATIVE EMOTIONS ON THE INTERNET

4.1 Identify and Intervene in Key Nodes

Identifying and intervening in key nodes is an efficient strategy in the process of alleviating negative emotions on the internet. This method is based on the umbrella model of network communication and the characteristics of circle communication, and regulates the emotional trend of the whole network by influencing key individuals or topics. In the umbrella mode, information tends to spread outward from one or several core nodes, forming a wide range of communication networks [8]. These core nodes may be opinion leaders on social media, initiators of hot topics, or news media with wide influence. It is possible to work with opinion leaders and encourage them to publish and share positive information and positive stories as a way to counter and dilute negative emotions on the internet. At the same time, we can also optimize the algorithm to ensure that positive information get more exposure in the user's information flow, so as to have a positive impact in a wider range. In circle communication, information is spread within specific social groups, which tend to form around shared interests or values. The interaction between members within the circle is frequent, and the emotional resonance effect is significant. Therefore, cultivating influential figures or activists in the circle

plays an important role in guiding emotional expression and discussion within the circle. These influencers may be celebrities in the community, active users, or experts with specialized knowledge. They can guide the members of the circle to communicate healthily by expressing constructive opinions, providing psychological support and organizing online activities.

4.2 Build a Multi-Interactive Platform

It is an important strategy to build a multi-interactive platform when discussing the ways to dredge negative emotions on the internet. The core of this strategy is to create an open and inclusive network environment, so that users can communicate freely on different social media platforms, thus promoting the free flow of information and the exchange of multiple perspectives [9]. Different social media platforms often form their own independent information ecosystems, and users form closed social circles on their respective platforms. By establishing cross-platform interaction mechanisms, such as sharing content, updating status synchronously and setting links, users can easily transfer between different platforms, thus gaining access to a wider range of information and views. This mechanism not only helps to reduce the simplification and homogenization of information, but also enables users to form a more comprehensive and objective view in comparison and contrast, which helps to alleviate the negative emotions caused by a single perspective. The combination of online platforms and offline activities provides users with richer channels for emotional expression and communication. The anonymity and immediacy of online platforms provide users with a convenient way to express their emotions, while offline activities can provide a more real and in-depth communication experience. By organizing online discussions, live interactions, webinars and other activities, users can share their feelings and ideas in the virtual space, while also receiving immediate feedback and support from other users.

4.3 Strengthen Emotional Recognition and Feedback

In the guidance of negative emotions on the internet, it is very important to strengthen emotional recognition and feedback. Through the establishment of emotional monitoring system, we can capture and analyze the emotional dynamics on the network in real time to provide scientific and accurate decision support for counselling work [10]. We can extract emotional tendencies, such as positive, neutral or negative, from these text data and analyze them quantitatively. Such analysis can help us identify the negative emotional hot spots on the internet, understand which topics or events are most likely to cause negative emotional reactions of the public, and take timely measures to guide them. Secondly, the emotion monitoring system can also assist emotion recognition through user behaviour data. For example, user's interactive behaviours such as likes, retweets and comments on social media can be used as indirect indicators of emotional tendencies. Combining the user's basic information, historical behaviour and social network structure, AI algorithm can predict the user's emotional state, and even infer the user's possible reaction and behaviour trend to a certain extent. In addition to emotion recognition, the establishment of user feedback mechanism is equally important. Social

media platforms can collect feedback from users through questionnaires, user interviews and online forums [11]. This information can not only help the platform optimize the content recommendation algorithm, reduce the spread of negative emotional content, but also provide first-hand user demand data for the formulation of counseling strategies.

4.4 Promote the Dissemination of Positive Content

In today's internet age, the creation and dissemination of positive and positive content is essential to shaping a healthy online environment. Social media platforms can be optimized through recommendation algorithms to prioritize the promotion of content that delivers positive energy, education and inspiration. For example, the algorithm can analyze the browsing and interaction history of users, identify user groups interested in positive content, and recommend more similar quality content for them [12]. In addition, the platform can also set up special incentive mechanisms, such as providing traffic support, bonus incentives or other forms of recognition for authors who create positive content, so as to stimulate more creators to devote themselves to the creation of positive content. At the same time, social media activities are also an important way to enhance the impact of positive content. The platform can regularly organize thematic activities to encourage users to participate and share their positive stories and experiences. These activities can not only increase the participation of users, but also further expand the dissemination of positive content through interaction and sharing among users. The platform can also cooperate with public welfare organizations and educational institutions to promote thematic content beneficial to social and personal growth, such as mental health, environmental protection, cultural heritage, etc., so as to have a positive impact on the broader social level. In addition to promoting positive content through recommendation algorithms and social media campaigns, online platforms can also carry out emotional education to help users improve their emotional awareness and regulation ability. Emotional education can take many forms, such as online courses, interactive seminars, mental health columns and so on. These educational resources can help users understand the origin and impact of emotions and learn effective emotional management techniques, such as cognitive reconstruction, emotional release and stress relief.

5 CONCLUSIONS

This paper puts forward a series of strategies to deal with negative emotions on the internet through the in-depth analysis of the types, transmission mechanism and dredging methods of negative emotions on the internet. These strategies not only help to alleviate the negative impact of negative emotions on the internet, but also promote the harmony and progress of cyberspace. However, the dredging of negative emotions on the internet is a complex systematic project, which requires the joint efforts of the government, social organizations, media platforms and the public. Future research should further explore the causes and effects of negative emotions on the internet, as well as

more diversified and personalized counseling methods. We look forward to building a more healthy, positive and inclusive network environment with the joint efforts of all sectors of society, and providing a safe and harmonious network space for citizens.

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