"The Volcano of Civilization Erupts at Night": A Study of the Relationship Between Staying Up Late and Irrational Expression in the New Media Era

*Xinyi Deng
Jinan University, Jinan 250024, China
*Corresponding author E-mail: 2402853569@qq.com

Abstract: The establishment of interactive communication patterns in new media give people a broad space for expression, yet the frequent outbreak of irrational speeches in the virtual society which happened at night also needs to be urgently given great attention by the research community. Based on the theoretical foundation of ELM peripheral route, intergroup emotion-transmission and Croce's "intuitive knowledge", this paper uses a combination of questionnaires and semi-structured interviews to collect and analyze data. The phenomenon of staying up late generally puts individuals in an irrational state of mind, but it does not necessarily induce irrational behaviors in the process of online social behavior. The study explores the issue of the relationship between staying up late and irrational expressiig on the Internet, and proposes new related hypotheses that could deepen future research on emotional communication with regard to the irrational expressions of Internet users at night.

Keywords: ELM theory, Internet irrational expression, Intergroup emotion- transmission, Intuitive knowledge theory, Staying up late

1 Introduction

In the era of new media, with the establishment and popularize of interactive communication mode, people can obtain information quickly and participate in discussions and comments instantly, which makes people have a more adequate environment to express their opinions on the one hand; on the other hand, the new media interactive platform also connecting the emotions of social individuals, which affects the emotional trend of society.

If we take a closer look at many comments in the public opinion arena, we find that many of the remarks published at night are not directed at the social events themselves, but rather people pour out their negative emotions and disseminate through the social events. In other words, in the process of multiple secondary communications, the social event is transformed into a phenomenon of social group anger. In the end, the objective component of the news event becomes less and less, and the subjective emotions become more and more mixed.

Is this recurring phenomenon a mere coincidence? Is there a correlation between lax bedtime routines, staying up late, and the frequent outbreak of mass, irrational expression at night?

2 Literature Review

2.1 Relevant research based on the phenomenon of going to bed late and staying up late

A search was conducted on the CNKI using "(Topic: Staying up late (exact)) AND (Topic: Going to bed late (exact))"as the search sentence.

According to the analysis, the distribution of topics, subtopics and research levels among the papers on the topics of staying up late and going to bed late are mainly concentrated on clinical research and engineering research, and the content related to the media and journalism fields is almost zero. Therefore, although this phenomenon has caused many academic researches, it is still an innovation in the fields of communication, journalism and media. According to the graphical analysis of the annual trend of publications theses, it can be seen that the research published by communication and journalism scholars on the phenomenon of staying up late and going to bed late has gradually increased in recent years, indicating that this phenomenon has become a social group behavior that deserves attention and research. Therefore, it is necessary for this paper to study the phenomenon of staying up late and going to bed late from the field of journalism and communication.

2.2 Relevant research based on the phenomenon of irrational expression in the new media era

In "CNKI ", use "(topic = online comment + online public opinion (accurate)) AND (topic = social news + event news + current affairs news + news (accurate))" as the search sentence, and retrieved a total of 94 academic journals, 19 dissertations , 3 conferences, and 1 newspaper..

In 2022, domestic scholar Jing He published a paper based on the social crisis news "Yu Huan Case" to explore how to play the role of "elite subjects" in online news to guide public opinion, in order to provide future directions for building a healthy and harmonious public opinion environment. Scholar Mengmeng Chu 's paper published in the same year takes the media convergence as the theoretical basis and aims to optimize the future development of opinion-based programs in the online public opinion ecology, and specifically analyzes the opinion expression of online audio-visual programs. Scholars Tianze Dong, Chenxi Liang and Mingbo Xiahou studied the positive role of the official news media's textual model combining "rationality and sensibility" in online interactive communication from the perspective of linguistic theory, reflecting the importance of credibility and responsibility in media expressions to stabilize public opinion. Scholars Hongling Gao and Honghao Jin have conducted a more detailed and authoritative study on the overall governance of irrational speech ecology in terms of the guidance and management process of Internet public opinion. Their research shows that the governance of the domestic Internet public opinion ecology is inseparable from the two-way power of rule governance and public opinion self-purification. Only through physical means and ethical governance can “fix both the symptoms and root causes” of the Internet public opinion ecosystem to maintain and promote the multiple stability and sustainable development of the Internet

public opinion ecosystem.

However, these studies all start from the perspective of the media language norm of the communicator, ignoring the important role of network users as secondary communication individuals in the dissemination of news events in the new media era. Therefore, from the perspective of the irrational speech of Internet users, this paper explores the irrational deep factors of Internet comments, which is innovative and significant.

2.3 Related research based on Intergroup emotion-transmission theory

By searching in the CNKI with "(Topic: Emotion Communication)" and eliminating the results that are not related to the field of journalism and communication, we can find that since 2005, when scholars Xiaohong Chen and Geling Zhang first explored the relationship between consumer sentiment and word-of-mouth communication willingness in the CSSCI Journal of Consumer Economics, domestic scholars'attention and application of the theory of Intergroup emotion-transmission have been on a continuous rise.

In the past two years, the theory of Intergroup emotion-transmission has attracted the attention of the journalism and communication field, and has achieved many resuits of important research. Scholars Yunze Zhao and Zhen Liu pointed out in the CSSCI journal Editor's Friend in 2020: With the richness and accuracy of media technology in the new media era, the important position of Intergroup emotion-transmission theory in journalism and communication research will increase. Besides, the phenomenon of emotions detached from the news event itself will also abound with the interpersonal communication process. This study confirms the importance of analyzing and valuing emotional verbal information in news communication. Scholars Jun Xiao and Sunan Guo combined the theory of emotional communication with big data and algorithm technology to point out why live streaming has become a popular e-commerce marketing model today, and explore the positive role of emotional communication in a more adequate, intelligent and high-quality communication model, starting from emotions such as pleasure and trust. Scholars Yan Sui and Yan Li pointed out that in social network communication, the emotions attached to individual language may be reproduced and evolved into group emotional interaction awareness through the "meme mode", and eventually built into a social culture characterized by online language under the accumulation of social emotional atmosphere, which to a certain extent presents the impact of individual irrational speech on online emotions and social atmosphere. The social culture represented by Internet language, to a certain extent, shows the immeasurable negative impact of individual irrational speech on Internet emotions and even social atmosphere.

However, like most of the published literature, the negative effects of irrational online speech in emotional communication have been neglected to a certain extent because the previous studies focused on the roles and effects of surface and deep emotional genes in the communication process of online language.

2.4 Research based on ELM (Exhaustive Likelihood Model) theory

ELM (Exhaustive Likelihood Model) theory, as a medical psychology theory, has been used in the field of humanities and social sciences mainly in the fields of economy, finance and consumption. However, with the high degree of integration of information technology and media communication, and the interactive development and application of interdisciplinary theories, the central route and peripheral route theories in the ELM model have also been paid attention to by a few scholars in the field of journalism and communication

in recent years.

Scholar Tao Zhou constructed and analyzed a two-stage development model of online trust based on the ELM theory, and preliminarily discussed the four dimensions of emotional factors that affect online users' behavioral motivation and actual behavior. Domestic scholars Zixi Liu and Peng Zhu focused on the factors affecting information dissemination and information trustworthiness in microblog, a social media, based on the combination of network and ELM theories, and studied the motivation of users' behavioral willingness to participate in topic discussions and other behaviors on social media platforms.

However, with the continuous development of media interaction technology, the emergence of social news, and the widespread use and lightning speed of user interaction models, it has become necessary for the academic community to conduct a deeper analysis of emerging social issues based on ELM theory. According to the search results, we found that the number of literature on this phenomenon is extremely small.

In 2020, scholar Qiuyan Zhang took the "Shuang Huang Lian, a kind of medicine" panic buying incident of the new pneumonia epidemic as a research sample, and explored the causes of the irrational snapping behavior from three important dimensions: audience,beliefs and media. The dominant application of the " peripheral route " thinking model in the persuasive environment mentioned in the literature is important for this paper to explore the phenomenon of "irrational speech and behavior of Internet users in the face of social crises". However, the study written by Qiuyan Zhang didn't focus on the causes of the peripheral route thinking mode from the perspective of individual users' mental states, and therefore did not answer the question of why irrational social opinions are frequent at night recently.

2.5 Relevant research based on Croce's "intuitive knowledge" theory

In the search of Croce's theory of "intuitive knowledge" on CNKI, most of the literatures focused on the theoretical content of logic, practical philosophy, etc., but less literature pays attention to the rational definition and realistic objective existence of "intuitive activity" in Croce's " Four Stages of Spirit ". In the contemporary reality where the phenomenon of staying up late frequently occurs, along with the decline and disorder of individual bodily functions, intuitive activity often takes a dominant position in psychoanalysis and is directly perceived by the individuals nowadays. Combining Croce's theory of "intuitive knowledge" with the theory of " peripheral route " in the ELM theory, we may be able to answer the question of the relationship between the phenomenon of staying up late and the frequent outbreak of negative social comments at night.

Therefore, starting from Croce's " intuitive knowledge" theory, intergroup emotion- transmission theory, and the peripheral route and central route theory in the Elaboration Likelihood Model, this paper attempts to answer the following questions:

1. Why do recent discussions on social events often show a "blowout" outbreak at night?
2. What is the psychological mechanism of individual when they go to bed late and stay up late? Do those behaviors leave individuals in an irrational states of mind?
3. Will the phenomenon of staying up late and going to bed late induce emotional speech and irrational expression of Internet users?

3. Introduction to Research Methods

3.1. Hypothesis establishment

Based on the above questions, the corresponding hypothesis is: staying up late is correlated with the irrational level of online speech.

H1: The later the time of falling asleep and the longer the number of consecutive nights of sleep, the higher the possibility of the individual being in an irrational state induced by staying up late.

H2: The higher the likelihood of being in an irrational state induced by staying up late, the weaker the subject's ability to analyze social events in depth, and the higher the extreme degree of online comments posted by the individual.

3.2. Method

In order to prove the hypothesis, this study uses a combination of questionnaire survey and semi-structured interview method.

The questionnaire was mainly released through the online platform named Sojump, and the questions can be broadly categorized as: basic personal information, habits and degree of staying up late, information browsing and speaking habits on social media platforms, frequency of unreasonabl speaking and degree of extremeness. Data was collected on a large scale from users of various age groups and social media platforms.

In the interview method, this study conducted 15-20 minutes semi-structured in- depth interviews with 10 interviewers who had a history of browsing news reports before bedtime. The interviews were conducted from July 17, 2022, to July 20, 2022. The interviewees were designed for three age groups: young, middle-aged, and elderly, and the educational backgrounds contained three categories: middle school graduates, undergraduates, and postgraduates. The collected interview samples differed in age, occupation, education level, location, and habits of staying up late and browsing news, with low homogeneousness, and all interviews were sufficient to answer the research questions, so the samples collections ended.

The interviews were conducted in a variety of forms, including telephone interviews, Wechat text interviews, and one-on-one face-to-face interviews. The results of the interviews are compiled verbatim.

4 Effect Analysis

4.1 Sample feature description

A total of 220 questionnaires are collected, and after data screening and handling, the data samples of "not browsing social news events before going to bed", a total of 28 questionnaires, were removed. The amount of final valid sample is 192. Among them, 40.63% of people tend to express their opinions directly in the comment place; most of the late night groups stay up for 1-3 hours, accounting for 23%. In the state of staying up late, most of the group's state when making extreme comments is a brief period of impulsive personal emotions such as anger, fear, disgust, criticism and surprise; and more than 50% of them think they are not in the state of staying up late when making extreme comments. Except, most people believe that

irrational emotions generated in the state of staying up late do not or less often evolve into excessive words and deeds.

4.2 Description of structural analysis results

H1: The later the time of falling asleep and the longer the number of consecutive nights of sleep, the higher the possibility of the individual being in an irrational state induced by staying up late.
Cross-tabulation analysis of the time point of going to sleep, the length of staying up late and the possibility of irrational state showed $p<0.01$, and there is a strong correlation between the two, indicating that this hypothesis is established.
H2: The higher the possibility of being in an irrational state induced by staying up late, the weaker the individual's ability to analyze social events in depth, and the higher the extreme degree of online comments published.
Cross-tabulation analysis shows that $p=0.486>0.05$, then there is no significant difference between the two, and this hypothesis does not hold.

4.3 Analysis of the results of the semi-structured interview method

4.3.1 Population characteristics of the interview members

There are 7 in total, 4 are young people (3 females and 1 male, 2 undergraduate students, 1 graduate student and 1 high school graduate), and 2 are middle age (1 female and 1 male, 1 university graduate and 1 graduate student) and 1 elderly (female, secondary school graduate).

4.3.2 Perceptions of the relationship between staying up late and irrational online expression

Except for one elderly respondent and one middle age male respondent, all the respondents have late nights and lax bedtime routines. For most respondents, having a late bedtime inevitably leads to a state of staying up late. At the same time, the higher the compression of sleep duration and the longer the number of consecutive nights sleep and staying up late, the more obvious the bodily function's perception of the negative emotional pressure caused by staying up late. This perception is mainly and strongly reflected in one's emotions, not only during the period of staying up late, but also often with a certain continuity.
"When I first joined college, I was willing to put down my phone to sleep at about 2:30 am every night. At first, I didn't feel that staying up late had any physical and mental effect on my mood or else; but then I gradually found that the day after I went to bed late, Almost I cant`thelp being fidgety and anxious about everyone around me. Then I gradually realized that I could not adapt to staying up late, otherwise I would not be able to do anything the next day." (S1)
During the bedtime period of just lying on the bed while do not fall asleep, respondents have the habit of swiping the social media apps before falling asleep. Some of the respondents browse and access information purposefully while the majority of them engaged in ‘revenge entertainment procrastination` activities.

Therefore, most of respondents browsing content hit or miss. They tend to focus more on social hotspots and entertainment news that are less relevant to them.

"Before going to bed, they use WeChat, Xiaohongshu and Zhihu. The former is used to focus on academic news, while Xiaohongshu and Zhihu are important ways for me to acquire the current hot topics information." (S10)

"I think that my late bedtime is for my entertainment and relaxation, so I don't want to memorize and analyze any information. I usually just casually look at the content that is farther from my life, which gives me a sense of novelty. Glued to phone at late bedtimes brings me so much fun and attraction, and although I am muddled at the time, it brings me an inexplicable sense of accomplishment and satisfaction." (S2)

The pan-thinking mode commonly produced by people in the state of staying up late is the application of the most basic and primitive thinking mode of human beings, which is what Croce called intuitive activity. Croce pointed out in the theory of " Four Stages of Spirit" that intuitive activity is the most basic activity, the beginning of human mental activity. It is the only independent one, also chaotic and opposed to the state of logical knowledge, "Intuition is the mind giving form to disordered, formless materials, substances, impressions, and is the active, fugitive activity of the mind", Croce once said. It is precisely because that people who stay up late lose their minds: even though they are extremely tired, they are still unable to resist the short-lived, bubble-like false ‘Tittytainment’ brought about by the pseudo-"self-empowerment" in time scheduling.

However, the conversations with some of the interviewees shake the assumption made in the previous section to a certain extent: going to bed late and staying up late are not exactly the same sign.

"I don't think going to bed late can be equated with staying up late. After I getting into the habit of staying up late to study or work, the quiet atmosphere at night tends to give me a greater sense of self- focused power and is more conducive to rational and peaceful thinking." (S3)

Observing the recent phenomena on the Internet, high frequency irrational statements often appear at night. On the one hand, this is due to the predominance of intuitive thinking activities; on the other hand, the emotional backlog of the day is also related. Not only do people tend to choose information content that is "weakly relevant" to themselves during rest time, but also their brain mechanisms tend to participate in topic discussions in a peripheral route when receiving and processing content. That is to say, they are less likely to mobilize subjective functions such as filtering and optimization. Therefore, they will involuntarily choose negative hit news which attracts people most.

Under the crushing of negative emotions, when people are unwilling to be patient and rational, violence becomes the most opportunistic solution, and is expressed through social media platforms with different degrees of irrational expression: light, it is limited to non-public chat; heavy, incarnate as a "keyboard man".

" Although I'm a linguistics major, but if I browse to some information in my daily break that does not match my own cognition, I often do not bother to deliberate, directly make a statement in the comment area. It's somehow on the spur of the moment. As for me, the mental state of staying up late makes me feel more irritable, but for the most part I am able to recover from short bursts of anger. Occasionally I will overreact, but almost immediately I delete those comments, unless the information I view is too beyond my perception and I cannot stand it, or someone on the other side of the Internet is'waring' or 'conversing'with me." (S6)

The irrational words and deeds generated under the peripheral route and infection brought by negative emotions tend to have a very short-lived impact on individuals, and most of them who stay up late can resume rational thinking in their daily sober state after resting at night.

"With the development of events and the change of reporting time, I have paid attention to it during the day and night. Because I have recently been in a chronic state of staying up late, I also saw reports at the midnight I myself feel that staying up late will have an impact on my perspective on the issue: I see more of a neutral perspective during the daytime, but at night I feel that my emotions are easily mobilized by other people. For example, when I read about social unfairness events, mentally I will feel more upset and confused compared to the daytime." (S7)

In the interviews, a number of interviewees denied that their extreme statements were related to the state of staying up late, but the facts they stated were inconsistent.

One interviewer, who said that she "the longer I stay up late, the more energetic I am, and always maintain her sanity," said, "Faced with the social news I saw at that time, I even felt that the perpetrators should not just be brought to justice, but also put their lives on the line. No exaggeration." (S5), being asked the time nodeshe viewed the news, "Around 10:00 to 11:00 at night."

Another interviewer who claimed to be "extremely tolerant of the outside world" made a similarly contradictory statement.

" I was holding a cynical and sarcastic attitude all the time towards the netizens who were scolding me on the opposite side of the Internet when facing that news on the Internet. I think I've always been extremely tolerant of the outside world because of my major, but that day I thought it was beyond my tolerance and acceptance, so I yelled at them online until 4:00 or 5:00 in the morning. Because of this, I have always felt that the majority of users on the platform are very furious and hostile, I have uninstalled that APP since then. (S8)

5 Conclusion

This study proposes the research proposition of "whether there is a link between staying up late and irrational expression", trying to understand the reasons why irrational expression at night is becoming more and more common on social media platforms as the interactive communication technology on new media platforms becomes increasingly developed and popular.

Based on the quantitative analysis of the questionnaire and the analysis of the interviewer's verbal content, we can find that: "The later the bedtime and the longer the number of consecutive days of late bedtimes, the higher the possibility that the individual is in an irrational state induced by staying up late." This hypothesis is valid. But " The higher the likelihood of being in an irrational state induced by staying up late, the weaker the subject's ability to analyze social events in depth, and the higher the extreme degree of online comments posted by the individual." This hypothesis does not hold.

Based on the analysis of the interviewers' elaborations, we draw the following conclusions:

1.There is a general association between late, lax bedtime and staying up late

It is an indisputable fact that the incidence of going to bed late and staying up late is extremely high in today's society. At the same time, in the era of Internet and new media, social media platforms have become an important medium for people to connect with the outside world, and the habit of browsing online information before going to bed further weakens main body's motivation to fall asleep, and then the main body activates the "compensation mechanism" and gradually become "addicted" to staying up late. ".

In the state of staying up late, the subject's physical and mental functions are often in a state of disorder, and this deep feeling directly affects the individual's life emotionally, and makes the individual's conceptualization and logical rational thinking ability gradually declineS. After staying up late for a long time, and comparing with the self-state in the non-staying-up situation, the individual can actually self-perceive the physical and mental state, and realize the poisonous effect of staying up late on one’s own emotional stability, but cannot "quit" the false satisfaction brought by staying up late.

However, compared with the objective fact attribute of going to bed late, staying up late is more like a special, personal mental state, and whether the person is in a state of staying up late varies from person to person. Therefore, late, lax bedtime and staying up late do not constitute a necessary cause and effect.

2.The phenomenon of high frequency irrational speech is easily formed at night

Long-term psychological structural tension is the "breeding ground" and "soil" for individuals to breed verbal violence. In the Internet era, people are able to remove all kinds of realistic constraints in social media platforms and relieve their stress by expressing their opinions, and achieve self-psychological and emotional adjustment to a certain extent. Compared with positive emotions, negative emotions are more likely to stimulate people's desire to share. The meaning of emotion must be built on the basis of social behavior, so the negative events circulating on the Internet social platforms at night naturally become people's emotional "carriers".

Under the resonance and diffusion of social media, the quality of individual emotions has changed into group emotions flowing into the public sphere. Once an individual's negative emotion explodes, other social individuals will be infected by the emotion through remote social media platforms, and then spread invisibly in the social network, which can easily be derived into a long-term stable group social emotion. By the same token, individual verbal violence tends to spread viciously into social "public anger" at night. It is not difficult to explain why cyber-violence, with emotions as the main component, has become more and more common in the Internet era.

3.Awakening and epiphany of the individual in the non-sleeping state

Facing the same problem, the individual used the "central route" to analyze it in the state of not staying up late, and what he obtained was often the rational product and peaceful deep thinking. Most of respondents admitted during the interviews that staying up late had a certain impact on their irrational speeches, while a few denied the connection,but the contradictory nature of their statements gave the researcher some insights and conjectures:

[1]All forms of investigation were conducted during the daytime, when people's rational thinking prevailed and therefore would instinctively substitute for rational thinking roles.

[2] "In the state of staying up late, most of the negative emotions and irrational remarks generated by the individual are purposeless products with the characteristics of unconsciousness and senselessness.

All in all, behind the frequent irrational expressions at night, it not only reflects the governance of the virtual network society, but in fact it is a side reflection of the main mental state and social reality in the new media network era. Paying attention to and making efforts to resolve the various negative emotions and social contradictions accumulated behind irrational expressions play an important role in the physical and mental development of social individuals, and the environmental governance of the network ecology and the high harmony of social relations.

References

[1] Dong Tiance, Liang Chenxi, Xiahou Mingbo.(2013).A Study on the Mode of Discourse of News Commentary by theOfficial Microblog of People's Daily. Chinese Journal of Journalism & Communication(09),81-91.

[2] Gao Hongling, Jin Honghao.(2017).The "Paradigm Crisis" and Method Innovation of Internet Public Opinion Guidance——Also on the Simplification, Scientific and Systematization of Public Opinion Guidance. Shanghai Journalism Review(10),72-81.

[3] Chu Mengmeng.(2022). I speak, therefore I am: the expression of views of audio- visual programs in the ecology of online public opinion. News Tribune(01),72-73.

[4] Shi Lihan.(2020). Seeing the Public Opinion Guiding Function of Online News Comments from Hot News. Press Outpost(07),59-60.

[5] Chen Xiaohong, Zhang Geling.(2005). The influence of consumer sentiment on word of mouth dissemination willingness. Consumer Economics(03),59-62.

[6] Zhao Yunze, Liuzhen.(2020). Emotional Communication: Concept, Theories and Its Position in Journalism and Communication. Editorial Friend(01),51-57.

[7] Guo Sunan.(2020). Algorithmic Emotions: Emotional Transmission in Live Streaming. News and Writing(09),5-12.

[8] Sui Yan, Li Yan.(2020). On the Role of the Internet Language in the Social Communication of Individual Emotions. Chinese Journal of Journalism & Communication(01),79-98.

[9] Zhou Tao.(2009). Online Trust Two-Stage Development Model based on ELM. Library and Information Service(12),133-135+148.

[10] Liu Zixi, Zhu Peng.(2017). The Research on Influence Factors of Microblog Topic Credibility Based on Elaboration Likelihood Model. Information Science(08),94-100.

[11] Zhang Qiuyan.(2020). Analysis of the phenomenon of mass panic buying based on Elaboration Likelihood Model. Communication and Copyright(09),182-184.

[12] Luo Peng, Wang Xueyao.(2018). Media crisis incident reports in the context of risk society——Taking the "Vaccine Incident of Longevity Organisms" as an example. (eds.) Research on Media Law and Rule of Law Journalism 2018 Vol.(pp.170-177).

[13] Li Huanyu.(2022). Analysis on the characteristics of network emotional communication in the post-truth era. Journal of News Research(05),121-123.