

The Influence of Various Thematic Attributes on the Spiral Theory of Silence in the Environment of New Media-Taking Tesla Events as an Example

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Abstract. Different issue attributes affect the public's willingness to openly express their opinions and changes the state of the "spiral of silence" under the development of the Internet. This article is an example of the Weibo comments section of Tesla's price reduction, Lin Zhiying's car accident and Tesla's other car accidents. Through the calculation and dissemination search method, this study selects five news on Weibo from 3 events. Depending on the number of likes, 15 comments are extracted in order, and each event is collected. Using 75 comments, the authors analyse and explain the differences between personalization and non-pro personalization events, risk awareness and risk-free awareness events, and the hypothesis that the "spiral of silence" is more evident under personalization and risk awareness. The study believes that public opinion on social media has many other influencing factors and that the relationship between risk awareness subjects and the "spiral of silence" is more substantial and has been testified by assumptions. The subject of personalization has developed in a unique form due to other factors.

Keywords: Spiral of silence; issue attribute; personalization; risk awareness; new media environments.

1. Introduction

Three incidents about Tesla attracted the attention of the media and the public in 2022. On July 22, 2022, Lin Zhiying and his son were driving a white Tesla Model X when the accident happened. On November 5, 2022, the Tesla traffic accident in Chaozhou, Guangdong Province, was a serious traffic accident in the No.4 Middle School in Raoping County, Chaozhou City, Guangdong Province. According to the driver, as preparing to stop, the vehicle suddenly lost control and ran at high speed, hitting two motorcycles and two bicycles, causing two deaths and three injuries. On January 6, 2023, Tesla officially announced the price cut on its official website in China. The above three events have all triggered discussion among netizens, reflecting the phenomenon of "silence spiral theory" in the development process of this event. The "silent spiral" refers to the increase of the silence of the opinion of the other party, which forms the spiral development process in which the voice of one side becomes more and more powerful and the other party becomes more and more silent. This paper through this event, further discuss the basic characteristics of "silent spiral" phenomenon. Combined with the theory, the analysis leads to three attention trends about tesla events, what characteristics of emotional content, whether it also conforms to the "silent spiral theory features" in the independent variable, different issues will make "silent spiral" in different events bring different effects, to produce all the issues of public opinion trends follow the "silent spiral" question.

At present, there is abundant research on public opinion in China, mostly from the perspective of current affairs and politics to explore the guidance of public opinion under the new situation and new media platform. In addition, Huang Jinghua and Chang Ning made a questionnaire survey on the

silence and the expression of opinions in the anonymous environment in 2014, and drew the conclusion of the complexity of the silence spiral theory in the new media environment [1]. In 2021, Chen Xiaowei and Dong Shuo focused on the new characteristics of the popularization, fragmentation and deconstruction of network public opinion under the background of the reform of network enabling new media [2]. Thus, it can be seen that the network's public opinion constantly shows a new trend along with the development of The Times. Therefore, this paper will refer to previous studies, pay attention to the current hot Tesla-related events, and analyze the trend of network public opinion from the perspective of new media from the spiral theory of silence.

Next, this paper is divided into a theoretical framework, research methods, research results, opinions, and suggestions respectively.

2. The Core Content of the Spiral Theory of Silence

In 1974, German communication scientist Elizabeth Nol-Neumann put forward the "silent spiral" theory for the first time in her paper in the Journal of Communication [3]. Noel Neumann believes that the formation of public opinion is not the result of people's discussion, but the result of opinions based on social environment and climate pressure. When people express their views, if they perceive that their views are consistent with those of most people, they will have the courage to express their views, thus entering the spiral cycle where strong opinions dominate. On the contrary, if people perceive that they have only a few supporters, they will keep silent for fear of being isolated, so that other opinions will disappear in public.

Therefore, those who hold a minority opinion will remain more and more silent, while those who hold a majority opinion will occupy a leading position, causing those who hold a minority opinion to turn to those who support the majority opinion under pressure. In this way, a spiral development process has been formed, which has been extended by scholars' spiral study of silence, Yuanyuan put forward the new concept of "changeable spiral", and believed that in the Internet era, "silent spiral" has four new forms: "upward spiral", "upward spiral", "downward spiral", "divergent spiral" and "focused spiral"[4].

Guo Qingguang summarized the spiral theory of silence into three propositions [5]. First, the presentation of personal opinions is a process of social and psychological guidance. When people express their opinions, they try to seek supporters from their groups and the surrounding speech environment to avoid being left alone, which is the social characteristic of people. The exclusion of social events will make people feel lonely, and people have an innate fear of being isolated. Therefore, in order to avoid being isolated, people try to consider the current "opinion climate", and the evaluation of "opinion climate" will affect people's expression of opinions in public, leading to a very few remarks being ignored.

Second, the expression of opinions and the spread of "silence" is a spiral process of social communication. The silence of those who hold minority opinions will make the "dominant" opinions dominate the process of information dissemination, thus bringing a kind of public opinion oppression, forcing those who hold minority opinions to become more silent or to support the "dominant" opinions. Therefore, the formation of public opinion presents a spiral process of development and communication.

Third, mass communication influences and restricts public opinion by creating an "opinion environment". The expansion, intermediation and substantiality of the media have an important impact. Views released through official media such as newspapers, radio and new media are generally regarded as authoritative, which makes the public a sense of trust in the views conveyed by the official media, thus making the mass media guide the development of public opinion. The "silent spiral" theory emphasizes that the media plays a dominant role in the process of information dissemination, and individuals can only passively receive information. In this case, although some opinions transmitted by the media may not be the mainstream opinions in the society, they may also be

mistaken for the mainstream opinions for dissemination. It can be seen that the media, to a certain extent, create social reality and guide the direction of public opinion.

3. Research on the Different Impacts of the "Silent Spiral" Theory under the New Media Public Opinion Environment

3.1. Mass Media Creates a "Climate of Opinion"

Many scholars believe that in the new media era, everyone can become a producer and disseminator of information. Therefore, the authority of the mass media in creating a "climate of opinion" is questioned. In Neumann's era, the Internet was not yet popular, and television and other traditional media had the greatest impact, so she vividly compared the impact of traditional media to "observation through the eyes of television"[3].

Sun Yan has reported the results of 2019 China Media Market Trends. The result shows that there are 1.28 billion television viewers in China, and television is still one of the most important ways for people to receive information [6].

However, in order to comply with the development trend of new media, many traditional media are also undergoing transformation. Traditional media have opened new media accounts on different social media platforms, and pay more attention to the impact of "explosive" and "fast" brought by the Internet platform. From the perspective of the number of viewers and fans of these new media accounts, People's Daily, CCTV News and other official mainstream traditional media have always occupied an absolute dominant position. These changes make the mass media still create an "opinion climate" in the new media era and have an important impact on individual communities.

3.2. Catastrophic Development of "Opinion Environment" under the New Media Environment

In the era of extensive omnimedia communication, audiences have more ways to express and acquire information. From the absolute passive acquisition of information by audiences in the original mass communication to the active acquisition of information, the emergence of new network media leads to the characteristics of large, miscellaneous and scattered audiences. The threshold of entry in cyberspace is low, and the subject of opinions in cyberspace is much diversified. Therefore, the original "opinion climate" formed by the unilateral transmission of information is attacked

In the new media environment, different media have guidance errors when reporting the same event in order to gain traffic [7]. Therefore, in the process of information transmission, correct and rational guidance should be given to the masses with a positive attitude, which is conducive to the construction of positive social influence.

As an individual, the information absorbed in the new media environment is more extensive and complicated, and the different speech guidance brought by the event is in a trend state [8], which also affects the time span of the event circulating in the network.

In the report of the Teochew Tesla case, there were as many as 85 media outlets, and each of them triggered extensive comments. Therefore, different media have different positioning attributes of the report, and the specificity of the audience group leads to the difference in the information received. However, it can be found that, based on the network media carrier, individuals have formed different "opinion environments" when expressing the information received by the event.

3.3. The Development of the Applicability of "Opinion Environment" in the New Media Environment

While giving information sources opportunities, the Internet has also gathered a wide range of the same opinions. People in different spaces have "out of the domain" due to the existence of virtual communities, and different opinions are integrated in virtual cyberspace. The network has shortened

the transmission time, allowing users to be exposed to the "opinion mimicry environment" created by the network, resulting in the "spiral of silence" spreading faster.

Network users access the Internet through virtual id to evaluate events and publish their opinions. On the one hand, based on the freedom of speech that traditional media can't achieve, relevant restrictions are imposed. On the other hand, Rachoene and Oyedemi said that it is believed that individuals can freely express their views to guide the trend of events without a sense of responsibility and restraint, and even wrong guidance can avoid the conflict of real identity to hide [9,10].

4. Research Issues and Methods

As part of the survey and analysis, this research selected Weibo's comments on Tesla-related car accidents and price reductions. Among the events related to car accidents, Lin Zhiying's car accident and Chaozhou Tesla's car accident focus not only on the spread of public opinion on social media platforms and the universality of fermentation, but also on public personality in the era of online computerisation. The Tesla crash in Chaozhou and the Tesla price cut have, on the one hand, the universality of the public release of information on the Internet in the age of social media and, on the other hand, the specificity of public opinion choices in the face of safety performance and other factors.

By comparing two different groups of topics above, the main issues discussed in this document are as follows: What are the general characteristics of the trend to the attention of comments on the different attributes of the subject? What are the characteristics of the emotional content of the comment text? What is the difference between the comment texts with different subject attributes? Are these different things always compatible with the theoretical characteristics of the "silent spiral"? At the same time, this article studies the impact of thematic attributes on the state of the "silent spiral", and whether the theory of the "silent spiral" still exists in the era of new media of the continuous development of the network, and against the new development model.

In the data collection process, the authors get feedback data with five Weibo content for each topic, then sort the data in Python and classify the textual content. The specific classifications are clear in the analysis of the corresponding results.

5. Results and Analysis

5.1. Analysis of the General Evolution of Comments

This research collects five comments on two car accidents under the theme of personalisation. Depending on the time of the comments, the linear graph of the trend of change in the number of comments is received one month after the occurrence of the two incidents.

According to the investigation, after a car accident in Chaozhou on November 5, 2022. The number of comments after the peak of November 18 between November and September and November 9. November (nearly 10,000) increased rapidly, then decreased slowly (Fig.1).

Lin Zhiying's comment on the car accident reached its peak on July 22(almost 6,400), and then quickly fell to 0 before July 30 (Fig.2). In this article, the authors inferred that the reason for the modification of the comment data is correlated with celebrity public relations treatment. Lin Zhiying Studio issued a statement on Lin Zhiying's Weibo on 7.25, saying that Lin Zhiying does not want to waste too many social resources to pay attention to his problems.

This study believes that this personalised event has not developed in such a hypothetical way, but ultimately leads to the development of a silent spiral and the loss of soil for change. Next, the authors further divide the attributes of personalised topics, and believe that personalised events in different groups of people also have different influences on public opinion.

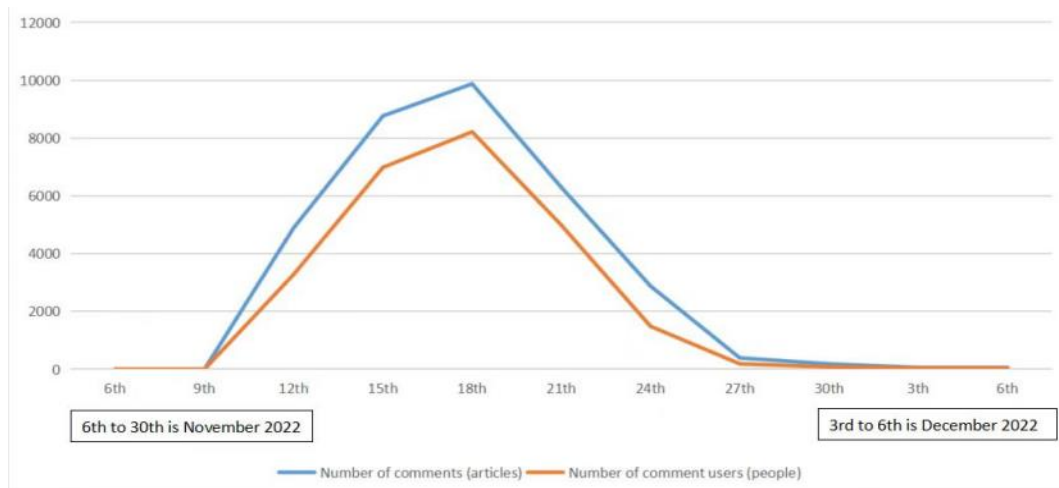


Fig 1. Comments' trend change.



Fig 2. Comments' trend change of Lin Zhiying's accident.

5.2. Check the Text Properties: Popular Words

After examining some texts of Lin Zhiying's car accident (removal of punctuation, stop words, high-frequency basic terms such as Tesla and Lin Zhiying), the word frequency statistics are accidents, runners, fires, and new energy.

After examining some texts of the Chaozhou car accident (removal of punctuation marks, invalidation words, Tesla and other high-frequency base words), the frequency statistics of the word are the system, brake, accelerator, data, and artificial intelligence.

After examining some texts of the Tesla price reduction event (removal of punctuation marks, invalidated words, price reduction, Tesla, and other high-frequency base words), word frequency statistics revealed that the five words are the highest frequency: Legal protection, property, costs, consumers who are willing to play and lose.

5.3. Analysis of the Subject of the Comment

In order to further analyse the specific content of the comment text, some comments are selected as examples of the formation of manual annotations for the events of each subject.

In the online comments on Tesla's price reduction incident, 13,309 comments on the classification of the text were extracted and divided into 5 categories: "support price reduction", "no price reduction", "neutral", "rational analysis" and "common" (Table 1). Among them, category 1 represents about 41%, category 2 represents about 9%, category 3 represents about 5%, category 4 represents about 41% and category 5 represents about 4% (Table 2).

Table 1. Definition and statistics of subject classification of comment text (Tesla's price reduction).

Classification	Definition	Table key pronouns	Number of text
Support price reduction	I think the price reduction is ok and reasonable	Fill up, really bashful, goods, gathering trouble, shame, Maotai, vegetable market, stock...	5463
No price reduction is supported	Feel cheated, some cheated	IQ tax, when a joke, do a leek, rights protection, price protection, scalpers, leek box, refund...	1249
Neutral	Neutral attitude, no bias	Management price trouble, normal phenomenon, lose to win, the spirit of contract, self-financing for profits and losses...	618
Rational analysis	Look at problems in a rational analysis	Business plan, legal benefits, market economy, reasonable, normal fluctuations...	5463
Join in the fun	Surf the Internet	More people win, car dealers, cut leeks, funny, off my business, don't buy...	516

Table 2. Percentage of categories (Tesla's price reduction).

Category	Percentage
Support price reduction	41%
No price reduction	9%
Neutral	5%
Rational analysis	41%
Common	4%

Internet users' comments on car accidents in Chaozhou extracted 4,591 comments on the text classification, "Support for Tesla's identification results", "No support for Tesla's identification results", "Neutral", "Reasonable Analysis", "and Evil" (Table 3). It is divided into 5 categories of "targeting system". Among them, Category 1 accounts for about 8%, Category 2 accounts for about 60%, Classification 3 accounts for about 15%, Classification 4 accounts for about 12%, and Classification 5 accounts for about 5% (Table 4).

Table 3. Definition and statistics of subject classification of comment text (car accidents in Chaozhou).

Category	Definition	Representative keywords	Amount of text
Support Tesla identification results	think there is no problem with the Tesla appraisal results, the owner's own problem	The brakes are good, step on the electric door, trust, take full responsibility, the accelerator is the brake, the emergency brake	342
Tesla identification results are not supported	A number of similar incidents have lowered trust in Tesla	Data control problems, loss of trust, car cheating, hidden dangers, doubts, brake failure	2780
Neutral	Neutral attitude	Persuasion, background data, third-party detection structure intervention, installation of surveillance cameras, speak with facts	690
Rational analysis	Rational analysis to look at the results	I also want to smear Tesla, intriguing, fight a price war, do not blindly follow the trend and take sides, public security report	568
Malicious targeting	Do not understand the nature of the event, malicious comments	What is the picture, will not buy a tram, banknote capacity, heat reduction, long life, Tesla is garbage	211

Table 4. Percentage of Categories (car accidents in Chaozhou).

Category	Percentage
Support for Tesla's identification results	8%
No support for Tesla's identification results	60%
Neutral	15%
Reasonable Analysis	12%
Evil	5%

In Lin Zhiying's comment on a car accident, 3,423 comments on the text classification were extracted. It is divided into five categories: "accident caused by Tesla quality problems", "rational analysis", "hope Lin Zhiying to return to health as soon as possible", "join the fun" and "malicious targeting" (Table 5), of which Category 1 accounts for about 64%, Category 2 accounts for about 12%, Category 3 accounts for about 7%, Category 4 accounts for about 14%, and Category 5 accounts for about 3% (Table 6).

Table 5. Definition and statistics of subject classification of comment text (Lin Zhiying's car accident).

Category	Definition	Representative keywords	A mount of text
Tesla's quality problems caused accidents	It is believed that Tesla's chronic accidents are caused by quality problems	Tesla, spontaneous combustion, automatic, failure, accident rate, out of control, too high fatality rate, accident	2186
Rational analysis	Neutral attitude, objective analysis	New energy, lithium battery, combustible, inflammable and explosive, hidden danger, tram	396
Hope Lin Zhiying to return to health as soon as possible	Worried about their idols or concerned about the injuries of the protagonists in the accident	Prayer, peace, health, recovery, hope	241
Join in the fun	Join in on the Internet surfing	Can't afford, don't buy, don't buy, joke	486
Maliciously target	Do not care about the specific cause of the accident, do not participate in the discussion, directly scold	Smelly feet, garbage, garbage, garbage, soft bones	114

Table 6. Percentage of Categories (Lin Zhiying's car accident).

Category	Percentage
Accident caused by Tesla quality problems	64%
Rational analysis	12%
Hope Lin Zhiying to return to health as soon as possible	7%
Join the fun	14%
Malicious targeting	3%

The result revealed that the "spiral silent" theory exists on the subject of risk awareness and personalisation topics (the remaining comments on social media). The number of classified views has an overwhelming advantage, and the theoretical model has a stronger spiral state: in the problem of risk-free perception, the form of development of classification theory 1 "spiral silent" is "diversified spiral".

6. Conclusion

Through the above research, this paper finds the following results: Firstly, personalisation and risk awareness have overwhelming advantages for public comments. The more sensitive text of the explanation also showed a more extreme discourse. However, there were disagreements about the rotation of the "Silent Spiral". Lin Zhiying's Tesla car accident lost heat unexpectedly in the three days of the incident, and the "spiral silent" did not turn with a stronger tendency to investigate the force initially expected. The car accident in Chaozhou lived up to expectations. The number of opinions of strong political parties has taken an overwhelming advantage. Over time, a rare different voice did not evoke a splash, but it quickly disappeared under the pressure of the opinion of a strong party, and the "quiet spiral" changed more strongly.

Secondly, instead of risk awareness and non-personalisation, there is a small gap between at least two points of view that form a state of conflict. Most of the comment texts are reasonably discussed. Tesla's price reduction event corresponds to the theoretical characteristics of the "spiral silent", and this event also corresponds to the original assumptions made in this study. Under safe knowledge and in non-personal conditions, the rotation of the "spiral silent" is low.

By studying how the state of the "silent spiral" is affected by the attributes of the subject, whether the theory of the "silent spiral" still exists in the current era of new media, and what are its spa factors. This paper provides an important discussion to show whether it will affect the state of the material and if it will respond to the new development model.

However, there are still many limitations to this research. Given the huge amount of traffic caused by the Lin Zhiying incident and the Chaozhou car accident, it is difficult to analyse all the content of the Weibo Super Topics and make quantitative choices for research. The accuracy is different from the analysis of all samples. At the same time, the question of why the "spiral silent" stopped unexpectedly directly is also an important factor for Lin Zhiying's car accident that affects the spiral, but the subject of this study is personality. This has nothing to do with whether you are aware of the risk or not, and it has not been thoroughly investigated.

In this study, it was mistakenly found that Lin Zhiying's car accident did not respond to the development trend of the "spiral silent" and that influencing factors could not dig it deeper. "In a subsequent study on the theory of the "Silent Spiral", the researchers can still dig deeper. Is it possible to investigate such cases that lead to the direct loss of vitality of current events, and if they are frequent events, this to complete the investigation into the factors that affect the "s spiral silent"? Whether there is a similarity between them.

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