The Communication Characteristics and Intervention of Terrorism-related Public Opinion ——An Analysis of Manchester Bombing Terrorist Attack

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Abstract: [Purpose / Significance] The crisis of misinformation will increase in 5G.The spread of terrorism-related information in sudden violent and terrorist incidents in social networks has a great impact on national security and counter-terrorism work. The communication characteristics and impact of terrorism-related information is the guarantee of counter-terrorism work. The construction of counter-terrorism intelligence intervention strategy is in line with the scope of national security, which also is the embodiment of the national security governance system and counter-terrorism capabilities. [Methods/Procedures] Based on the social network analysis method and analyzing the communication characteristic of terrorism-related information and the factors of intervention, this paper proposed an intervention mechanism for terror-related information based on online social network. The proposed mechanism consists of three aspects: communication topic, communication structure and opinion leaders. [Results/Conclusion] The study finds out that we should strengthen the role of opinion leaders in information diffusion of news and government media, in terrorist incident, the network structure is loose and free on the whole, the spread of information influences the network structure and interaction. Government should supervise a real-time control on information emotional trend and hot topic according to different types of network structure characteristics, guiding the positive information and cooling down the harmful ones.

Keywords: Online social networks; Terrorism related Information; Communication Characteristics; Intervention Research
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I. Introduction

In the 5G era, the amount of information is booming, resulting in an increase in the risk of network communication. Terrorist organizations, as non-state actors, are free from sovereign states. The ambiguity of their organizational structure, unpredictability of their behavioral characteristics, and the internationality of their scope of activities

seriously affect the non-traditional security and national strategic capabilities of countries, and pose challenges for the precise focusing of national strategies.[1]Violent terrorist incidents are different from general public crisis incidents. In recent years, terrorists have completed seamless connection between offline and online through the Internet. Social networks have become not only the channel for their terrorist activities, but also an important tool for their propaganda and mobilization of terrorist ideas. Through online and offline means, terrorists connect specific frameworks with social experience, values, beliefs, etc., so that people from different countries who share the same interests

and cognition have achieved identity and emotional resonance.[2]In the stage of terrorist attacks, on the one hand, terrorists and their supporters continuously upload videos and speeches of violence and terrorism through public social media; on the other hand, the information exchange among ordinary people on social media also accelerates the interactivity, infectivity and invulnerability of violence and terrorism information dissemination.

Scholars in China and other countries mainly focus on the dissemination model, dissemination motivation, dissemination stage and other aspects of crisis public opinion. In the aspect of public opinion dissemination, Hegselmann et al. proposed the "limited trust" model and conducted simulation research on it, thus opening up the research on public opinion dissemination model. [3]Then, on the propagation of fully connected social contact, classical epidemic models such as SIR model [4]and SIS model [5]are studied. Golder et al. studied the purpose model of communication behavior by directly researching various data of 4.2 million users of Facebook. In 2011, [6]Han Shaochun established a dynamic public opinion evolution game model based on the mechanism and dynamic development of herding effect in the process of public opinion evolution.[7]Alan Tsang proposed a dynamic model of opinion dissemination based on homogeneous networks.[8]Chengwei Zhang proposed a game dynamics model of public–media public opinion based on reinforcement learning in 2018. In the aspect of network public opinion prediction,[9]LanYuexin puts forward a dynamic prediction model of network public opinion heat.[10]In the aspect of mining and identifying the subjects of network public opinion, Li Zhuozhuo and other scholars have combined the social network analysis method and the content analysis method to explore the opinion leaders in the network from the measurement of centrality, the location calculation of the core-edge model and the influence coefficient.[11]In the construction of network public opinion model, LiuC and Zhang ZK used the SIR (Susceptible-Infected-Recovered) model to study the information dissemination path.[12]

However, there are few studies on the characteristics and influence of public opinions concerning terrorism, especially the intervention. In the aspect of public opinion transmission, Li Lihua analyzes the main body, information characte ristics and transmission characteristics of network public opinions in terrorist violence.[13]In the aspect of malicious information which is likely to induce public bad mood and destroy social order in the network public opinion dissemination, Yuan Desong and others put forward a series of traceability methods for the false information in the public opinion dissemination network.[14]Chennan et al. introduced the social welfare game model into the BA scale-free network to judge the optimal timing of government intervention.[15]In terms of countermeasures, Li Long et al. explored how to use artificial intelligence to carry out reconnaissance and filtration of violent and terrorist remarks, screening of terrorist-related images and screening of extreme videos in the algorithm era, in order to effectively prevent and combat. Taking the media use of terrorist organizations as the research object,[16]Tang Runhua focuses on the reasons, characteristics, influence of media use and the government's response strategies in the era of social media, so as to provide a theoretical support for the government's network public opinion governance and the fight against terrorism; The network public opinion monitoring early warning model based on semantic membership fuzzy reasoning proposed by[17]Zhang yanfeng and other scholars; The mobile social network public opinion early warning model based on AHP- fuzzy comprehensive analysis constructed by[18]Wang Gaofei and other scholars;[19]Sun Lingfang et al. proposed a network public opinion crisis warning model based on BP network and genetic algorithm.[20]

In current studies, few are based on the 5G era, taking terrorism and public opinion as the research object, anti-terrorism intelligence intervention as the research foothold, and using first-hand network big data for empirical research. Most of them are based on technological path innovation, lack of qualitative thinking, and lack of in-depth discussion on the following issues: The generating logic and characteristics of public opinion concerning terrorism? Factors affecting the intervention of public opinion involving terrorism? The technical path and intervention strategy of intervening harmful public opinion related to terrorism? This study uses qualitative and quantitative research methods, based on qualitative research on the dissemination modes and influencing factors of public opinion related to terrorist on social networks, taking the network

topology structure and compactness centrality of online social networks as the research method to find the optimal intervention strategies for public opinion control, and then provides theoretical support for the anti-terrorist intelligence work of our network.

II. The Characteristics of Public Opinion Dissemination of Violence and Terrorism in the 5G Era and The Influencing Factors of Intervention

In the 5g era, due to the particularity of violent terrorist events, the sensitivity of content and the severity of the consequences, compared with the general network public opinion, the violent terrorist public opinion will increase and be hidden, which not only has the linear transmission characteristics of ordinary network public opinion, but also presents the particularity. Internet public opinion is mostly spread based on the online social network of information publishers and readers layer by layer. It presents a multi-directional radiation based on each communication node and a layered propulsion of the overall network with opinion leaders as the core. [21]

The dissemination process of public opinion concerning terrorism in social networks is the process of organizational mobilization and emotional mobilization of netizens. During the mobilization start-up period of the outbreak of terrorist violence, people's cognition of terrorist violence is in a shallow stage due to the fragmentation of information and dispersivity of users, and information from all parties is gathered and integrated; In the stage of public opinion diffusion, the endogenous power mainly comes from the rapid aggregation of information. With the diffusion of public opinion content and the injection of panic emotions, information begins to mutate, various rumors and sensitive information proliferate in large quantities, and users' emotions are gradually constructed; In the stage of public opinion focus, with the further formation of the communication sub-network structure, the "compartmentalized" and "homogenized" communication of social network public opinion leads to further differentiation of user attitudes, spread of communication topics, outbreak of emotions, and the communication presents a collective development in speed, scope and intensity. In the precipitation period of public opinion related to terrorism, with the events gradually becoming clear, the user's attitude and emotion gradually stabilized, and the information gradually tended to ease and precipitate in content, emotion and dissemination. However, at the same time, if there is further intervention from external factors, secondary public opinion could easily be generated, causing another round of public opinion hot spots; Finally, the public opinion on terrorism is dispelled, and users' participation in terrorism-related information gradually decreases to disappear. Based on the opinion leader, the content of the public opinion concerning terrorism and the attributes of the communication network, this paper studies the mechanism of interference in the dissemination of public opinion concerning terrorism.

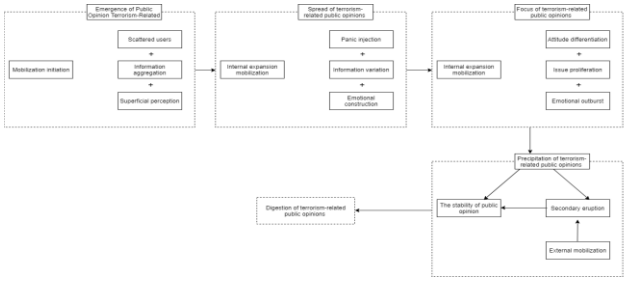

Figure 1 the dissemination process of public opinion related to terrorism

III. Study Design

Data gathering

The data used in this research is Twitter public opinion data after the explosion in the Manchester area of the United Kingdom. At 10: 33 p.m. local time on May 22, 2017, an explosion occurred inside a stadium in Manchester. After the explosion, officials confirmed that the incident killed at least 19 people and injured about 50 others, which was classified as a terrorist incident. According to the real user data on the online social platform Twitter, this paper selects the original tweets about the Manchester terrorist attack in the social networks within one week after the incident, and expands the information dissemination network based on @ relationship. On this basis, a public opinion dissemination network of Manchester terrorist attacks on Twitter was constructed. In order to ensure the authenticity of the experimental results, this paper uses HTTP web crawlers to obtain original tweets up to 19:30 on May 31, 2017, and crawled a total

of 142146 original tweet data from Twitter. The properties of the obtained data set are shown in Table 1.

Table 1 Schematic Diagram of Manchester Event Public Opinion Network

Dataset properties	Values
Number of nodes	24396
Number of edges	23450
Average degree	1.138
Average path length	2.079
Diameter of network	9
Average cluster coefficient	0.066

Study Methods

The study adopts social network analysis(i.e. dismantling and coding the network information of the "Manchester terrorist attack" on Twitter in the case), analyzing the relationship between various variables, and carrying out public sentiment intervention from three levels: macro network structure, middle communication nodes and micro communication content.

First, in the macro-network structure, involving network attributes, community structure, community degree centrality analysis;

Second, in the aspect of middle-level communication nodes, the analysis is mainly carried out from the degree-centered nodes and sub-networks;

Third, in the micro-discourse narrative aspect, it mainly focuses on the analysis of high-frequency topics and semantic prosody.

This study uses social network analysis to conduct intervention calculation. In the intervention for opinion leaders of dissemination nodes, the network connectivity coefficient is used as a measure of the promotion strength of nodes in the network in information dissemination. By calculating the connectivity coefficient of different nodes and intervening with nodes, the optimal control effect on the current network is achieved.

The network connectivity coefficient is based on the closeness centrality in the network topology. When a node in the network is removed, if the meanvalue of the closeness centrality of all points in the social network is larger, it indicates that the average distance of message transmission within the network becomes longer due to the removal of the node. Since closeness centrality can describe the length of time that information is communicated between nodes, a higher value indicates that nodes are closer to other nodes, so communication intervention is based on this. The process of calculating closeness centrality is shown in formula 1, supposing network G=(V, E) exists, where V is the set of nodes, E is the set of edges, and |V| is the number of nodes in the network.

$$C_c(v) = \frac{\sum_{t \in V \setminus v} d_G(v,t)}{|V| - 1}$$

The network connectivity coefficient is the sum of the closeness centrality of all nodes in the network, and the change of it represents the change of smoothness of information dissemination in the current network. Communication intervention is conducted by using the network connectivity coefficient (i.e. intervening the nodes in the communication network that have a greater role in promoting public opinion communication).The definition of network connectivity coefficient is shown in formula 2, where l is the total number of nodes, vk is the kth node, |V| is the sum of the number of nodes in the current network, and dvi is the path

length between nodes i and v.

$$CF = \sum_{k=0}^{|V|} C_{vk} = \sum_{k=0}^{l} \frac{|V|-1}{\sum_{i \neq k} d_{ki}}$$

This study focuses on the communication intervention technology path of opinion leaders. After data acquisition, the connectivity coefficients of different nodes are calculated and the nodes are intervened, so that the optimal control effect on the current network is achieved.

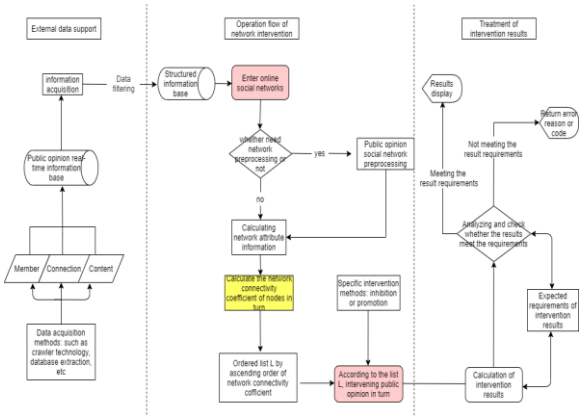

Figure 2 Roadmap of Public Opinion Intervention Technology

IV. Study Findings

Communication Structure Intervention in Violence and Terrorism Incidents

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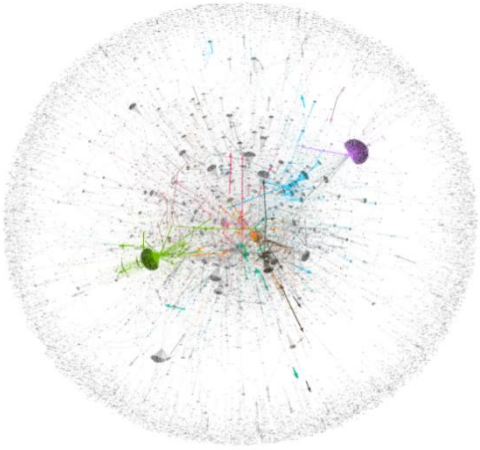

Figure 3-1 community structure of public opinion communication network

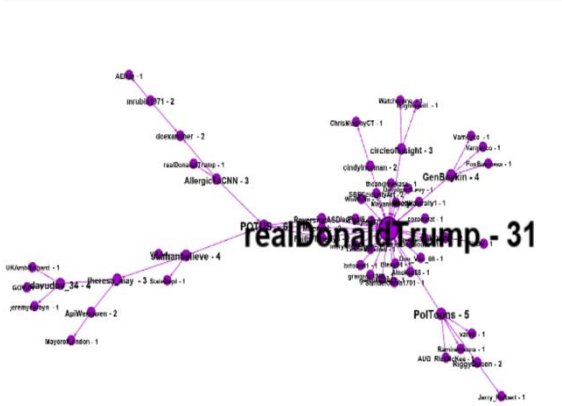

Figure 3-2 community of public opinion communicationnetwork 1

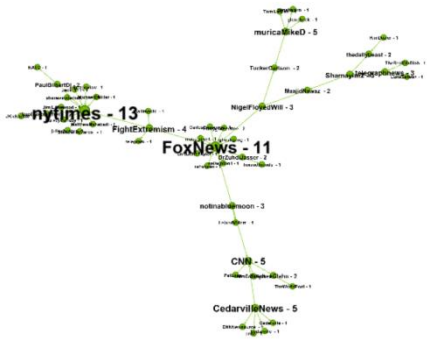

Figure 3-3 community of public opinion communication network 2

Figure 3-4 community of public opinion communicationnetwork

This paper uses Gepthi to divide the public opinion transmission network into more than 3,000 communities, and the results are shown in Fig. 2-1.Since many users do not have "@" others after posting, many free nodes are formed as a result. Therefore, communities with less midpoint in the community can be ignored.The three communities with more nodes in the graph are analyzed, as shown in Fig. 2-2,2-3,2-4. As the figure shows, Community 1 is a political community with political leaders such as “realDonaldTrump” as its central node, indicating

that most of the users in this community are political leaders or users who are concerned about the voices of political leaders after the terrorist attacks; Community 2 is a media community with "nytimes", "FoxNews", "CNN", "Cedarville news" and other media organizations as the central nodes, which shows that the users in the community pay attention to the news of authoritative media after violent terrorist events

Community 3 is a celebrity community structure with Ariana Grande as the center, which shows that users pay attention to singer Ariana Grande, a singer involved in the violent terrorist incident in Manchester. In addition, the network density of the three communities is calculated to be approximately 0.001, which indicates that the relationship between the user nodes in the communities is significantly closer than that of the overall network.It can be seen that although the user relationship in the overall network is still relatively loose at present, with the development of public opinion trend, a virtual community structure with closer relationship will be formed gradually in the present and the future. The government can strengthen public opinion intervention by identifying communities with close network structure.

Second, the media community is closely structured and opinion leaders are pluralistic.

In order to further explore the information dissemination within the community, and then select appropriate intervention methods, this study selects the louvin algorithm as the community discovery algorithm to discover the community of the public opinion network of the Manchester terrorist incident. This paper selects the media community of FoxNews, youtube and bbcnews, and studies its degree centrality to identify and intervene key nodes. As shown in Fig. 3-fig. 5.

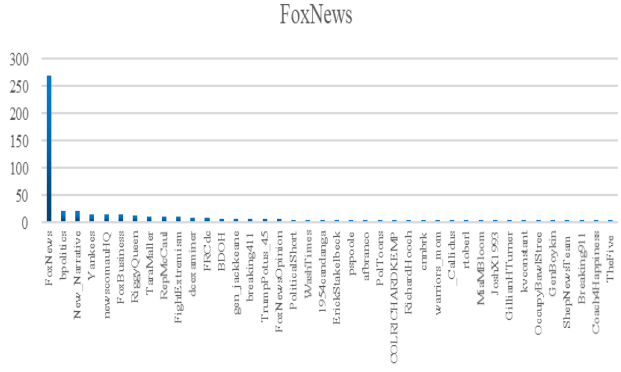

Figure 4FoxNews Community Degree Centrality Distribution Chart

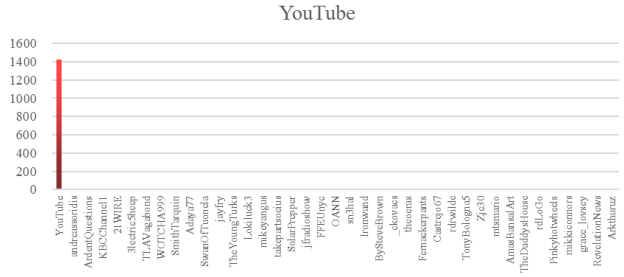

Figure 5Youtube Community Degree Centrality Distribution Chart

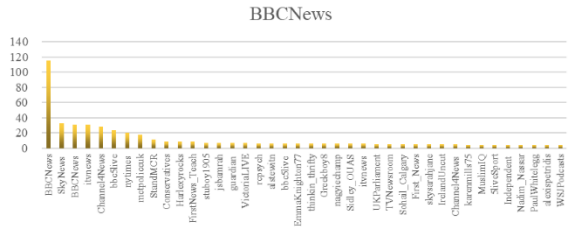

Figure 6 BBC news Community Degree Centrality Distribution Chart

Through the above research, it is found that the community structures of media opinion leaders Foxnews, Youtube and BBCnews are relatively close, and opinion leaders also present different characteristics in different community structures. In the traditional news media Foxnews and BBCnews, the top five are political figures, news media, journalists, etc. However, opinion leaders on the Youtube platform are mostly ordinary self-media accounts. Given that opinion leaders play a key role in information diffusion, the government can conduct more targeted public opinion intervention and guidance by identifying opinion leaders on different platforms.

Communication Nodes Intervention in Violence andTerrorismIncidents

First, on the whole network, the media and government accounts become authoritative information sources.

Degree centrality reflects the relationship of nodes with many connections in the real world. In-degree centrality is used to measure the popularity of nodes and out-degree centrality is used to measure the clustering of nodes. Study shows that the top three users in the in-centrality ranking are YouTube, ArianaGrande, FoxNews and Mail Online, all of which are news media or government agencies. The top four users in the centrality ranking are respectively journalism_news, QuilliamOrg, bodhibrian and MENnewsdesk. All of them are professional media, media personnel and government agencies.

Therefore, in the process of public opinion intervention, regulators can make use of the users with high out-degree and in-degree centrality to give the first-hand authoritative information which is conducive to social stability, and strengthen the supervision of high out-degree users.

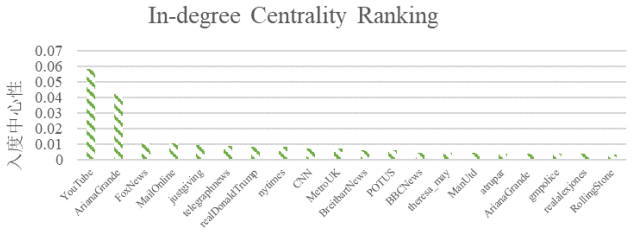

Figure 7 In-Degree Centrality Distribution Diagram

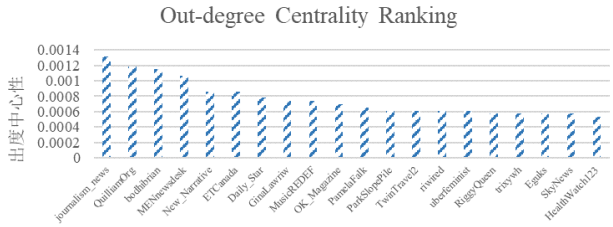

Figure 8 Out-Degree Centrality Distribution Diagram

Second, in the process of proliferation, public opinions related to terrorism are easily combined with social hot spots.

Social hot spots provide a dynamic guarantee for the dissemination of public opinions related to terrorism. Social hot spots have the characteristics of wide spread, wide topic extension extensibility and easy occurrence of secondary public opinion. As a kind of crisis public opinion, the internet public opinion concerning terrorism has the characteristics of topic sensitivity, fuzziness, agitation and exaggeration. In the process of spreading, the terrorism-related public opinion is extremely easy to seek the common characteristics of the two in social hot events, endowing social hot spots with the attribute of being involved in terrorism, and continuously creating topics on the internet to carry out viral transmission, which provides external assistance for the spread of terrorism-related public opinion.In the process of communication and intervention, it is particularly necessary to prevent the excessive combination of terrorism-related public opinion with social and political hot spots and international political hot spots, and to prevent the generation of secondary public opinions to affect the domestic and international political stability.

In this study, five representative major topics # were selected to construct the sub-network, namely, internal affairs issues, Brexit issues, loving wishes, international influence and terrorism.

Table 2 Five Issues and Extracted Words

Issues	Extracted Word
Internal Affairs Issues	UK、primemister、vote、election、Britain、Bristol、congress….
Brexit Issues	briexit、europ、European、europaleague、g7….
Loving Wishes Issues	pray、love、motivation、compassion、 no more violence….
International Influence Issues	africa、America、trump、Obamaslegacy、UN、Israel、Japan….
Terrorism Issues	Islamic state、terrorism、immigration、terrorist、extremism….

Then, sub networks are extracted for different topics. According to the topics mentioned in the tweets, multiple sub networks representing different topics are constructed. According to these sub networks, the development trend of public opinion on different types of topics can be analyzed. From the characteristics of the sub networks, it can be seen that terrorism topics are still the focus of attention. However, with the spread of terrorism-related public opinion, the topics extend to different fields, such as connecting terrorism with international politics, U.S. presidents and international relations, and connecting violent and terrorism incidents with "Brexit" hot political events, which form the overflow of violence and terrorism public opinion and the outbreak of secondary public opinion.

Table 3 Diagram of subnetwork conditions

Sub-Network	Number of Nodes	Number of Edges
Internal Affairs	436	302
Brexit	82	55
Loving Wishes	974	721
International Influence	854	628
Terrorism	1413	1048

Third, on the sub-network, positive and negative circles of public opinion influence the trend of public opinion on violence and terrorism.

In addition to intervening the important nodes of the whole communication network, we should also focus on the sub-network and analyze the characteristics of the sub-network users and intervene. The purpose of public opinion control is not to solely promote or suppress the dissemination of event information, but should use the connectivity coefficient, based on analyzing the characteristics of public opinion in sub-networks, to achieve the purpose of intervening public opinion involving terrorism by suppressing harmful or malicious information and expanding the influence of positive public opinion.[22]

According to the calculation method of network connectivity coefficient in the technical path, analyzing the network connectivity coefficient of five sub networks, the results are shown in Fig. 8.

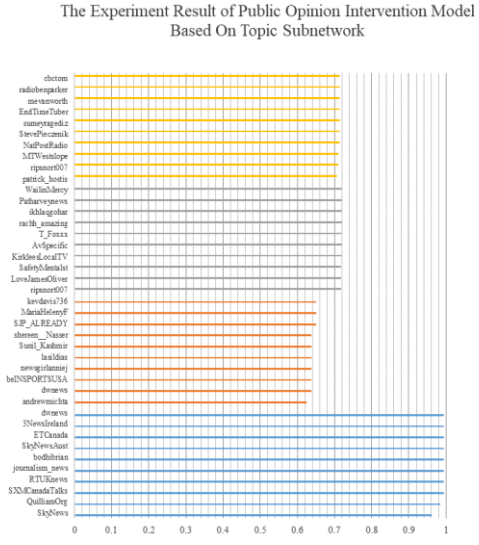

Figure9The Experiment Result of Public Opinion Intervention Model Based On Topic Subnetwork

Among the sub-network topics, the topic of loving wishes in the positive public opinion mostly revolves around praying for the victims, the world has love, etc., and individual users are the main force of communication. From the network connectivity coefficient diagram of the public opinion dissemination sub-network, it is not difficult to find that users such as ripsnort007, LoveJamesOliver, SafetyMentalst have great influence on topics such as loving wishes in online social networks. If it is necessary to enhance the follow-up benign public opinion dissemination of Manchester event, such users can be urged to participate in the active guidance of network public opinion.

The issue of Britain's internal affairs and the issue of Brexit, which are derived from the terrorist attacks, may have a negative impact on the local political ecology in Britain. At the same time, we can see that different from the topic of love, the news media in such topics have a greater influence on public opinion. The network connectivity coefficient of the UK's internal affairs shows that the network connectivity coefficient is 0.9618 and 0.98433 respectively after deleting SkyNews and QuilliamOrg. Therefore, if it is necessary to control the public opinion of the political network and prevent the incident from causing greater public opinion impact on the UK's internal affairs, the two professional media opinion leader nodes can be controlled.

Communication Content Intervention In Violence andTerrorismIncidents

First, in the content, the topic is pluralistic extensibility.

In this paper, we first analyze the data in username and hashtags in the data set. When the empty data in hashtags is marked as #null, we construct the edge table by taking the normalized number of likes as the weight of the edge. After the modular analysis of "manchester terrorist attack" by using Gephi software, we can see the distribution of user tweets from the figure.

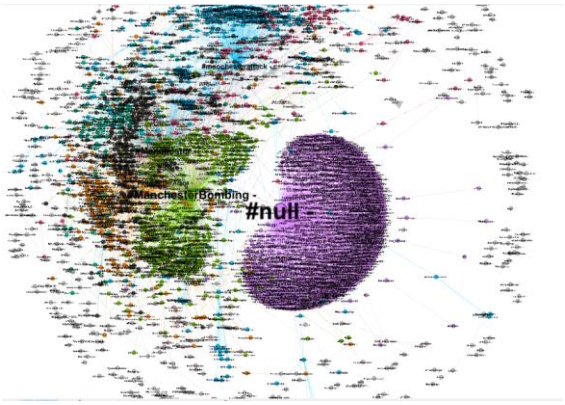

Figure 10 Keywords Visualization

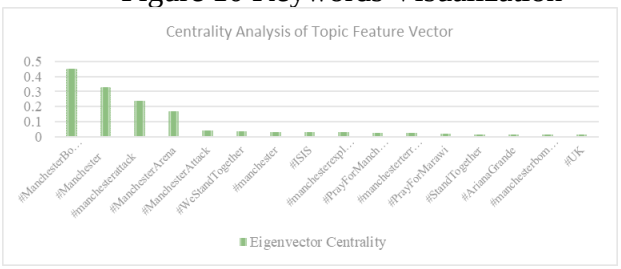

Figure 11 keyword comparison analysis

From the statistical chart, it is found that most users refer to the keyword Manchester attack in their own tweets, and some users also refer to the word "pray", from which the emotional direction of users and the attitude of we stand together are obtained. therefore, from these high-frequency words, we can get the theme and emotional direction of public opinion events.

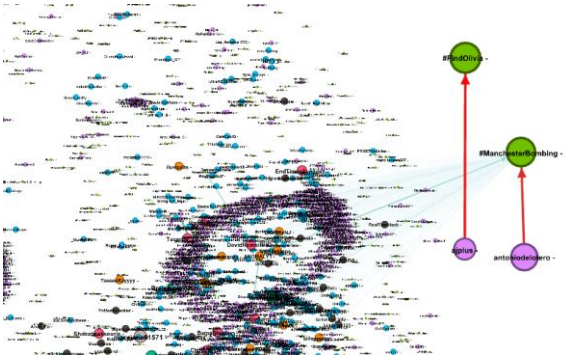

Figure 12 likes influence diagram

In the network constructed in this section, the normalized number of likes is taken as the weight of the edges, the tweets with the largest number of likes are found out, and the tweets sent by two groups of users are obtained. One is the tweet "15-year-old oliviacampbell is still missing after the Manchester attack. her mother is desireto # FindOlivia.pic.twitter.com/gw3hFLRnKe", The second is the user antoniodelotero's tweet about the Manchester bombing "If Your Reaction to The # Manchester Bombing Is To Blame Muslims Then You're Fucking Sick". The first tweet is that the disappearance of a 15-year-old child in the explosion has aroused people's attention. In the second tweet, the author calls that the entire Muslim community should not be condemned for the bombing. Regulators can conduct in-depth research on the content, forwarding relationship, discourse derivation and public opinion development of tweets with the most favorable comments as the starting point, so as to grasp the development trend of the topic from multiple perspectives.

Secondly, in terms of semantic prosody, the rumors of violence and fear are easy to spread.

Semantic prosody is a discourse analysis method that infers the context of words based on their collocation rules. After determining a node word, it analyzes the grammatical structure of the node word and collocation word in the text segment. From the perspective of semantic prosody, we can understand the political attitude and discourse style of the audience. In this paper, semantic prosody analysis is used to study the description of Manchester terrorist attack in the tweet. First of all, taking attack as the node word, using BFSU Collocator software, the collocation strength of attack is calculated, and the log-log value is selected as the collocation strength representation. The top words are terrorist and Manchester (3.98 and 2.19 respectively). We use attack as the node word, terrorist and Manchester as the collocation words, and search the lines according to their collocation words, and deeply analyze their grammatical structures. The results are shown in Tab. 4.

Table 4 Attack and terrorist, Manchester collocations semantic prosody

	Before node words	Node words	After node words
1	*Terrorist	attack	*Terrorist known to authorities Anyone
2	*Terrorist	attack	happens in Pakistan* The world
3	The world : silent *Terrorist	attack	happens in Manchester* The world

4	Rose Roussos named as Manchester	attack	victim " https : //twitter
5	Manchester	attack	: UK terror threat level
6	Rips British Politicians after Manchester	Attack	: ' Petrified ' to
7	as latest victim of Manchester	attack	" https://twitter .
8	Manchester	Attack	: What They are NOT
9	Keep Talking About The Manchester	Attack	And It ' s Freaking
10	US intel leaks of Manchester	attack	to the media " https

The study found that the Manchester terrorist attack has aroused the discussion on terrorism among users. Through the tweets before the ATTACK byte, people generally associate the bombing with terrorists, and focus and label the terrorism issue; Through the first authorities, it can be seen that after the explosion, people would prefer to obtain authoritative information from government departments. If the government fails to seize the opportunity, rumors will show a geometric growth trend; Through the 5th terror, the 3rd, the 6th Petrified, the 9th freaking, etc., we can see threat the public is full of fear of terrorist attacks. the government and the news media should guide correctly in the first place to prevent social panic and internet rumors from spreading further; Through the second Pakistan and the tenth US intel, it can be seen that the British people are more likely to link the bombing with Pakistani and US intelligence agencies, linking it with international relations and national politics. The regulatory authorities should further analyze the public's international concerns and the further development of political rumors, so as to prevent terrorists from taking the opportunity to provoke relations between countries and disrupt the order of international public opinion.

VI. Study conclusions and recommendations

Study conclusions

First, at the communication node, opinion leaders push forward the dissemination and diffusion of information.

Opinion leaders are the intermediaries who have the most information resources. The stronger the centrality of opinion leaders in the network, the more power they have to speak and interpret in informa tion dissemination activities, and the greater their influence on other node users. After the terrorist attacks, opinion leaders are more professional news media or government agencies. They can use their own resources to influence the public's feelings and perceptions. In the research, we analyzed the importance of public opinion leaders in different nodes by means ofin-degree, out-degree and connectivity coefficient. We found that public opinion leaders push forward the dissemination and diffusion of information on social media and control the intensity and trend of information diffusion in real time. Through the identification of opinion leaders and the dynamic control of opinion leaders, with have the aid of the help of the power of public opinion leaders to cool down the harmful public opinion, which is beneficial to the guidance of public opinion.At the same time, in the personal accounts, the relevant departments should strengthen the supervision of the content, frequency and interaction of the individual opinion leaders.Social media communication is more likely to bring fragmentation of information, which not only means the fragmented expression of communication information, but also means that the anomie of individual network opinion leaders will cause the occurrence of mass anomie.[23] through extreme remarks, inflammatory performances and emotional catharsis, squeezing the space for rational expression and continuously heating up the terrorist public opinion in the network. In violent terrorist incidents, individual opinion leaders are often the main body of rumors and panic propagation. Government departments should pay attention to the role of different opinion leaders in information diffusion and carry out different types of intervention strategies.

Second, the communication network——the

dynamic dissemination of public opinion affects the network structure and interactive relationship.

The three elements of structure, group, and information constitute the interactive network of online social networks. The analysis of the network community structure reveals the inherent functional characteristics of complex systems, and the overall structure and sub-network structure can effectively identify community compactness, individual relationships, and trends in individual behavior evolution. The three elements of structure, group and information constitute the interactive relationship network of online social network. The analysis of network community structure reveals the internal functional characteristics of complex systems, and effectively identifies the community compactness, individual relationship and individual behavior evolution trend through the overall structure and sub-network structure[24]Through the analysis of network structure, it is found that although the network as a whole presents the characteristics of loose network, sparse relationship and isolated individuals, there are also several small communities with relatively close relationship in the network community. The top three network communities have political, media and celebrity effects.US President Trump is known as the President of twitter. His outstanding performance in the volume, timeliness and interaction of twitter posts has attracted international attention.

Third, the content of communication-pluralistic public opinion needs positive guidance and timely intervention.

From the perspective of communication topics, the topic of the terrorist violence mainly revolves around the bombing and gives rise to several kinds of topics. Through the analysis of key words, we can roughly divide them into five topics: terrorism, British internal affairs, British Brexit, love wishes, and international influence. Among these topics, terrorism accounts for a relatively high proportion, and people pay more attention to topics such as the inside story of the attack, the attacker, the casualties of the explosion, and the location of the explosion. The government needs to strengthen timely disclosure of case information, satisfy netizen’s desire for facts, and curb the spread of rumors.In addition, the topic of love wishes includes topics such as pray, love, motivation, compassion, and no more violence. This reflects that in the face of disasters, people show a humanitarian spirit of mutual benefit and mutual assistance. The government should increase the dissemination and intensity of this positive message, and create a public opinion atmosphere on the internet in which all the people work together to fight terrorism and do not bow to terrorism.At the same time, we also see that people's attention to the incident has also been extended to topics such as Britain's Brexit, Britain's internal affairs and international relations. The government should assess the impact of the terrorist incident on political ecology and international relations under the premise of having a profound insight into the political and international nature of the incident, and make a record of public opinion response and guidance.

Counter-terrorism Countermeasures and Suggestions in 5G Era

With the advent of the 5G era, Big Data will change terrorist organizations more in terms of terrorist organization form, terrorist transmission mode, terrorist activities, etc.On the surface, cyber terrorism is the activities of propaganda, recruitment, training, fund-raising and mobilization carried out by terrorists using the network. Its essence is the "strategic dissemination of cyber ideology" by terrorists. The network is the battlefield where justice forces and terrorists compete for the right to speak in ideology.The prevention of the spread of terrorist ideology, especially the spread of public opinion in the violent terrorist incidents and its management, has become a hot issue of concern from all walks of life.President Xi Jinping pointed out that the Internet is the "main battlefield" of public opinion struggle, and the Internet has become our "biggest variable".[25] For the war against terrorism in the era of big data empowerment, government managers should base on the artificial intelligence turn of the times, elevate the war against terrorism to the battle for ideology, and seek the transformation in the governance of public opinion on terrorism, sensitive information monitoring, early warning of public opinion on terrorism, and guidance of public opinion.

First, the change of thinking: to establish "big data thinking" in the governance of public opinion concerning terrorism.

At present, in the big data environment, terrorism risk information has the characteristics of multi-channel dissemination, multi-source heterogeneous data sets, and diverse business forms.In the era of artificial intelligence, the governance of public opinion related to terrorism is manifested in how to identify, delete, intervene and guide relevant information in massive data, so as to eliminate the impact of terrorist ideology on society at the application level, and thus achieve the purpose of anti-terrorism and de-radicalization.

For the governance of public opinion related to terrorism, the government should establish "big data thinking" and regard public opinion as an intelligence product from the perspective of open source intelligence circulation.It applies big data thinking to the perception and monitoring, assessment and standardization, analysis and processing, transmission, decision-making and action of information product circulation, and puts forward preventive countermeasures in terms of risk prevention, risk monitoring, risk early warning and risk assessment.

Second, the mechanism transformation: realize the early warning of public opinion risk related to terrorism in the big data era.

As we all know, the core of big data is prevention,prediction and early warning. Big data provides a data base and algorithm support for artificial intelligence anti-terrorism. Through data mining and analysis of specific algorithm models, we can compare the interactive relationship and development trend among the network, information and personnel.Only by obtaining objective and real data can effective information be obtained. Information lies between data and knowledge and acts as a bridge. Intelligence is a useful product from which data, information and knowledge are transferred. Based on big data, we need to transform a large amount of data scattered on the network into intelligence, and use artificial intelligence environment to realize risk prediction and early warning. In the risk assessment, the risk information can be constructed according to the characteristics of the risk information, such as the heat sensitivity of the subject, the reliability of the content, the dissimilation of the information, the survival degree of the risk information, the evolution of the risk information, etc.In terms of risk identification, the intelligent algorithm is upgraded, the artificial intelligence is applied to the risk identification of voice, image and video related to terrorism, the risk prediction is taken as the work focus, and the anti-terrorism public opinion monitoring, early warning, analysis, evaluation and feedback mechanism centering on national security is established; In the mode of emergency response, we should launch an attack, change "passive response" to "defense early warning", establish a social radar monitoring model, and timely identify and control terrorist-related information that endangers national security and political stability.

Third, integration turn: promoting the public opinion guidance of government synergy and integration.

In the information dissemination of violent terrorist incidents, social amplification of information transmission is extremely prone to risks. The process is a dynamic process from dissemination, interpretation and processing of risk information to public perception amplification. [26]In the first stage, the risk is perceived. Then, the risk information enters the social amplification station through the media, opinion leaders, party groups and other links, and goes through three stages: community gathering, emotion fermentation and perception amplification, forming the outbreak of online public opinion. In this process, social media becomes the gathering place and distribution place of the negative public opinion of violence and terrorism.

VII. Conclusions

Through the research, it is found that in the initial stage of public opinion dissemination when the violence and terrorism events occur, the online social network structure is still relatively loose, no relatively close community network is formed, and the interaction between individuals is weak.However, as public opinion continues to ferment, new sub-networks will emerge in the later stage of public opinion development. At this time, the cohesion of participating users will continue to increase, resulting in negative topics that endanger social stability.Therefore, the management of public opinion under crisissituation requires the cooperation and integration of various government departments to maintain the supervision of public opinion

dissemination, identify crisis public opinion, important communication nodes and public opinion leaders through big data, and reduce the rate of public opinion diffusion.And always pay attention to the trend of public opinion, through the appropriate time to choose the node with the characteristics of opinion leader to release positive information, to guide the trend of public opinion.The guidance of public opinion in the violence and terrorism incident is not only the work of the propaganda department, but also requires relevant departments such as the police, the government, the army, civil affairs, hospitals, diplomacy, cyber security and other departments to actively carry out business integrationhand, it uses big data mining and analysis capabilities to identify and control public opinion, andon the other hand,using big data mining and analysis capabilities, public opinion is identified and controlled. On the other hand, targeted, focus and potential public opinion guidance is carried out.

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