

Research on Network Rumor Management based on Immune Mechanism

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Abstract. The network is a complete biological system, and the network rumors, like bacteria and viruses, destroy the harmony and stability of the system. Inspired by the biological immune mechanism, this paper constructs a three-layer defense model of network rumor management. The first layer of defense is the moral cultivation of citizens. The second layer of defense is the self-monitoring of the network platforms. The third layer of defense is composed of government-led, online platform and authoritative experts with the help of social operation mechanism. Finally, it provides support for the security and stability of the network system through the dynamic and overall defense of the three layers of defense.

Keywords: Internet rumor, rumor governance, immune mechanism.

1. Introduction

The governance of online rumors refers to timely disclosure of facts, cracking down on spreading rumors, easing and avoiding public panic and social unrest. Since 2013, the state began to commit to the governance of Internet rumors, country to attach great importance to the management of Internet rumors which gives the powerful dynamic academic research.

Foreign governance: Compared with our country, foreign Internet development is mainly divided into two aspects: the coercive force and the shock force peculiar to the careful and comprehensive legal policy, and the guidance of guaranteeing citizens' right to know.

Domestic governance: We have borrowed the concepts and algorithms of physics, biology and many other disciplines to seek the governance methods of online rumors through quantitative calculation. The other research is to use qualitative analysis to seek governance methods.

Comparison of domestic and foreign research status summary: For the foreign governance results, we should learn from the positive attitude; for the domestic governance view, the study of multi repetition and the management method and the main body are not matched. The research on the management of the Internet rumors in the future should strengthen the innovation.

In view of the above, their limitation should be pointed out in time:

① the randomness of social networks makes it difficult to construct a network topology with a high degree of real social characteristics, and the corresponding network research is unreasonable. ② human being is complex and multifaceted. The complexity limitation of model computation can't meet the demand of classifying people in detail according to the actual situation. ③ the network world is inseparable from the real world, and the real world is restricted and influenced by many subjects. Each subject has its own unique and irreplaceable power to the management of the network rumors. However, the research at this stage has not been fully utilized. ④ the governance suggestions put forward by experts and scholars are duplicated, fragmented and incomplete.

2. Internet Rumor Management Model based on Immune Mechanism

2.1 General Framework Overview

Based on the mechanism of biological immunity, a new model of online rumor management is proposed, which consists of active defense line, passive defense line 1 and passive defense line 2.

Consider the entire network as a human system, the paper elaborates the function mechanism of the model and put forward suggestions for the main unit.

First, rumor as a virus to invade the body, stimulating the immune defense; secondly, in different periods of the immune response, the various social subjects in the framework perform their respective functions; finally, based on the development of rumors at different times, various kinds of immunization strategies are provided.

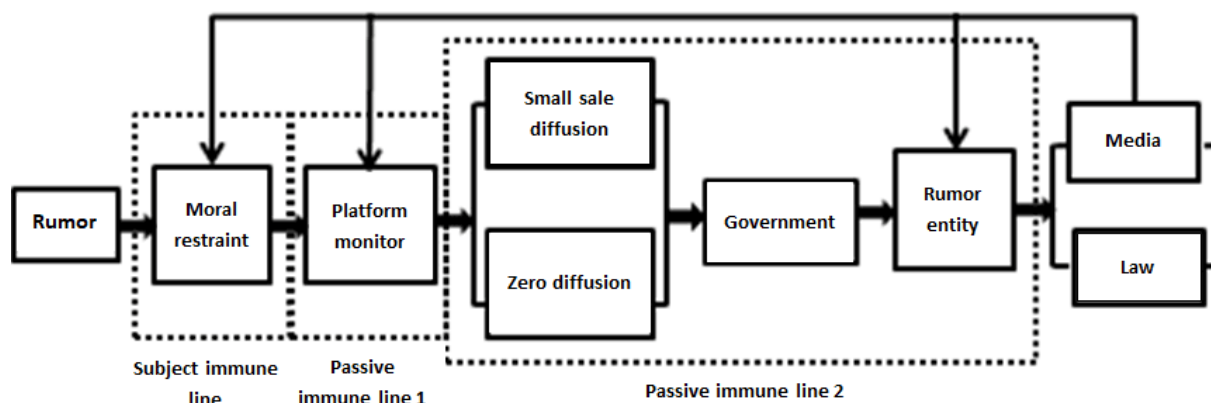


Fig. 1 overall framework

2.2 Three Layers of Defense

2.2.1 Layer 1: Active Immune Defense

The necessity of defense: As long as the individual has the idea of starting rumor, there is no scruple to pay for the action, it will continue to create anxiety and panic; Secondly, the acting force is mutual. On the one hand, the Internet rumors hurt the public, on the other hand, the public will vent the negative emotions on the Internet. Then the creation and dissemination of Internet rumors will enter into a state of evils. It will eventually develop into a situation that can't be governed.

Defense effect: ①The active immune defense line emphasizes the consciousness and self-control of the citizens. Moral binding force to people is a way to protect people themselves to make self-restraints on the impulse of starting rumor, then he took the initiative to abandon the manufacturing and dissemination of online rumors. ②Whether the information is true and reliable is related to the survival and development of the individual. Therefore, every member of the society has the motive to refute the rumor to find out the truth. The improvement of moral cultivation plays an auxiliary role in this motive. The initiative of the citizen to refute the rumor is a sublimation for the initiative relative to give up the rumor making. The high quality forms a protective layer for the citizens themselves, citizens insist on the network rumors not accept, do not condone the attitude, it is difficult to break through this moral line of defense with online rumors. From a macro perspective, the role of the active immune defense also means the whole society in an environment that suppresses online rumors. Network rumor is difficult landing or surviving in the good moral atmosphere of the whole society.

2.2.2 Layer 2: Passive Immunity Line 1

The necessity of defense: In order to enhance public interests, the governance of network rumors requires the joint efforts of multiple entities, the online platform, such as WeChat, Weibo and so on, is one of many entities. The network platform has unique advantages for the governance of network rumors: ①win through technology by programming ②through big data analysis and cloud computing to achieve information advantage.

Defense effect: set up dedicated departments and positions for public opinions, and approve and screen continuously updated information. Once information with high ambiguity, no scientific basis, and any attempt to arouse social turmoil is discovered, immediately restrict the access rights to the information. Then, delete directly, such network rumors are usually related to the platform and are

taken out of context, attracting eyeballs or distorting the history of party history and history, and promoting cults and feudal superstitions, or block and verify, point at the information seems to violate the law and regulations, once it is established as a web rumor, the disciplinary mechanism shall be immediately started. Such Internet rumors are generally closely related to people's daily lives, or they have already been stated in the law or system.

2.2.3 Layer 3: Passive Immunity Line 2

The necessity of defense: the rumor needs powerful professional knowledge or many resources to assist to complete. The platform needs the authority of the government to support because rumor refuting is of great significance to the society, but for individuals and organizations, zero-profit makes the enthusiasm not high, therefore, government-led is the inevitable requirement of this level of defense. The government needs the platform to provide information support. This period focused on the advantages of experts, industry organizations and associations' knowledge reserves.

Defense effect: It is similar to the wide range of non-specific effects in human immunity, not targeting a specific antigen. The pattern is: government-led, network platform and authorities cooperate between the each other, rapid response through the induction, preparation, effect, and memory stages, minimize the damage.

Induction stage: There are two kinds of situations in this phase: ① the network rumors have just entered the network and have not yet been acquired and spread by other users: The network platform blocks the information by sensitive vocabularies, and restrict the rights of publishers. ② Internet rumors have spread in a small area: The network system dynamically monitors the behaviors of platform users in real time. Due to its confusing nature, network rumors will attract a lot of attention in a short period of time. In this mechanism, once it is discovered that a certain amount of information is browsed and forwarded in a short time, capture it, and next take the above steps: blocking information and restricting behavior.

Preparation stage: While platforms cannot be solved by their own forces, the platform passes the preliminary analysis results to the government, and asks to help verify the authenticity. The government receives the ostracizing task and chooses to refute the main body for information transmission. After being selected, the rumor quickly verifies the rumor information scientifically, and scientifically explains it in the shortest time, and records the obfuscation points of the rumor to the public, and continues to provide feedback to the government department.

Effect stage: The government quickly sent the truth to the network platform. The platform deletes rumors, publishes the truth and forces the quarantined users to browse. The designated public receives the banned information and the platform sends the "Green Network Environmental Protection Letter of Guarantee". Users who understand the truth have lost trust and interest in rumors, the platform opens users' rights. At this point, the rumors lost host users and diffusion. They died on their own.

Memory stage: Subject departments promptly document the rumor: ① the government joined forces with the media to strengthen the intensity of popular science. ② Platform for self-learning in refuting rumors. ③ Expert associations shoulder the responsibility of eliminating illiteracy for the public in a timely manner. In summary, through the cooperation of multiple entities, the entire society has the ability to learn from itself. Then the effect of each defense line is getting stronger and stronger, and it is more and more difficult for internet rumors to confuse the public.

3. The Defense Measures in the Model

Active immunity defense: The government needs to play a leading role in popularizing science to improve public science literacy; appropriate extension of the education years of obligations is also equivalent to the work of scientific popularization; at present, many developed countries have been the media literacy education into the regular primary and secondary school education content. This is an inspiration for China's efforts to improve citizens' media literacy.

Passive immunization line 1 defense: Timely technical training for employees to help them perceive the changes in the internal and external environment in time, improve the staff's technical level; many network platforms do not help to govern the relevant work arrangements for network rumors, therefore, platforms should set up full-time personnel, establishing a corresponding management system.

Defense line 2 of passive immunization: The government should timely and dynamically sort the main body according to its credibility, so that after the rumors are obtained, the top subject experts will be required to convey authoritative information at the first time; establish punishment Mechanism for malicious users and Share User Blacklists on the Network. The government gives sufficient support to this disciplinary mechanism to make it authoritative and deterrent.

4. Measures to Protect Countermeasures

Active immunity defense: Moral education should be "starting from the doll". School education should focus on cultivating students' rights and responsibilities, enhancing their sense of responsibility, and eliminating "self-interest"; in family life, parents should preach and teach, and give enough care to the child's growth to ensure child's psychological sunshine is healthy.

Passive immunization line 1: Timely improvement of platform information security measures to ensure network security is the basic guarantee for long-term security of the network environment; strengthen technology research and development, timely monitor abnormal user activities through data monitoring, and compete with rumors for faster response times.

Passive immunization line2: Strengthen the strict control of the qualifications of professional associations and authorities; increase the financial support for experts and associations to ensure their survival; the network platform should bear certain responsibilities for users' speeches in laws and regulations; improve the information disclosure system for the public The request for a timely response; the ambiguity of the rumor itself and the state of the public in need of interpretation prompted its widespread dissemination, and should improve the efficiency of the government's key role.

5. Conclusion

The society is an overall operating mechanism and requires all parties to operate in coordination, the dynamic and overall defense of the three layers of defense contribute to promote the "government for all" situation. Next, we will further improve the framework, and we increase the rumors of the self-organized organizations and mobilize all forces in society to achieve a better result.

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