# Information cocoon and selective forgetting: a study on the effect of propaganda desensitization based on push mechanism

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**Abstract:** Under the algorithmic mechanism, the audience's long-term exposure to homogenous content will cause a certain degree of cognitive dissonance. However, long-term exposure to certain information may also cause a decline in the audience's understanding of the importance of the information, resulting in a desensitization effect. Based on the observation of the audience's desensitization to epidematic-related information during the epidemic, this paper uses the questionnaire survey method to collect data, and conducts cross-analysis to draw the following conclusions: First, on the whole, the more audiences are exposed to certain propaganda, the more important they believe it to be Secondly, there is a certain inflection point when the audience is in contact with the propaganda content. When a certain inflection point is reached, the greater the amount of propaganda, the less sensitive the audience is to the information. Three reasons for this phenomenon are proposed: reducedfear appeal shockof entertainment information and long-term exposure to numbness.

**Keywords:** Information cocoon room desensitization push mechanism selective forgetting

## 1 Introduction

With the joint efforts of the whole society, China has made great achievements in epidemic prevention and control. However, at the beginning of 2021, the epidemic in China has counterattacked, with the trend of multi-point distribution across the country. The mainstream media spread information such as the epidemic prevention and control

situation and the number of infected people on the Internet platformthrough the push mechanism, thus forming the related content of epidemic diseases of agenda setting, to guide the disease prevention and control in the whole society, which has fully played the role of the watchers.In this context, we observed that the audience gradually reduced their attention to epidemic-related information, and no longer paid attention to the severity of the epidemic and the increase in the number of infected people. Instead, they paid more attention to daily life and entertainment. The information about the epidemic that should be paid more attention is difficult to cause the audience to take it seriously.We wondered why this small group of users didn't pay more attention to a topic that needed long-term attention, but instead shifted their attention. What are the causes of this phenomenon?

## 2 Literature Review

The concept of Information Cocoons was first proposed byprofessor Keith Sunstein at Harvard University in his book"Information Utopia". He used personal daily to describe the wayInternet users choose to contact the Information they are interested in based on their personal preferences, and then reject and ignore other contents,forming an "information cocoon room" in the long run.

Sunstein argues that due to the existence of information cocoon room, people will only choose and contact with their views on the same or similar people, and adopt opinions that meet their expectations, thus gradually forming The Echo chamber effect (Echo Chambers) : The opinions and viewpoints that you agree with, as well as the things you are interested in, will be motivated and amplified by "positive feedback" in this communication field. The so-called "the strong get stronger, the weak get weaker"

After the theory of information cocoon room and echo chamber was put forward, scholars at home and abroad paid great attention to it and obtained many research achievements. Scholars generally believe that algorithm push mechanism is one of the important reasons for the formation of information cocoon house theory. Foreign scholar P Bonhard.MA Sasse pointed out that algorithm recommendation is very necessary. Our user needs and received information content will be accurately predicted by algorithm. Algorithms can even discover our unconscious needs. However, Yu Guoming, a domestic scholar, made a more detailed study of the information cocoon effect in China from the perspective of algorithm recommendation. His research

believes that the current algorithm recommendation mechanism falls into the logic of "engineering communication" and suffers from ethical dilemma. The algorithm optimization mechanism of human propagation should be established. It indicates that the imperfection of current algorithm mechanism may cause ethical dilemma, and we should pay more attention to the influence of algorithm on human beings.

However, although these studies have carried out research on thethe algorithm push mechanism of information cocoon room, they have not deeply explored how the information cocoon room plays a role in changing the audience's attitude, and to some extent confirmed the unilateralism and rigidity of the current information cocoon room.

In their article "Powe after Hegemony: Cultural Studies in Mutation?", foreign scholars Lash and Scott believe thatUnder the influence of algorithmic mechanism, people are gradually in an environment surrounded by codes, and power is encoded into the algorithm. It can be seen from this study that the push mechanism is difficult to achieve real "personalized" recommendation, and mainstream discourse is integrated into it to guide social public opinion. "Information cocoon house" is constructed not by individuals but by discourse.And domestic scholars Peng Lanze combined the actual phenomenon of information filtering in my country's Internet communication with the information cocoon theory, and believed that individuals would be affected by individual factors and situational factors when they contact information, so as to selectively understand and understand information.It emphasizes the initiative of the subject to a certain extent, and believes that the subject can resist the constructed "information cocoon" to a certain extent.

However, these studies did not study the phenomenon of selective access to information from the perspective of internal filtering in the information cocoon, so they did not answer the question of why audiences are desensitized to epidems-related information.

Desensitization is a term derived from systematic desensitization in clinical psychology, which refers to the gradual diminution of negative emotional reactions such as anxiety and fear as a result of repeated exposure to a stimulus. In sociology, desensitization refers to the loss of sensitivity to information resulting from excessive exposure.Three scientific committees in the United States -- the Shell Comprehensive Committee, the National Institute of Mental Health, and the American Psychological Association's Committee on Violence and Youth (Mullin,C.A.,& Daniel,L,1995) concluded that watching violence can increase aggressive behavior and the increase

of aggressive behavior is not the only negative effect of watching violence, but also may lead to violent desensitization of viewers through long-term tracing investigation and other relevant studies.Violent desensitization will cause people to become numb to violence and less sympathetic to others' injuries, thus reducing the probability of helping others. Anderson, a foreign scholar, has also studied the effect of violent desensitization. He pointed out that playing violent video games can lead to an increase in aggressive behavior, aggressive cognition, and aggressive emotion, as well as a decrease in the level of empathy and prosocial behavior. It can be seen that long-term exposure to certain information will cause desensitization, and audiences will reduce their sensitivity to a topic they have been exposed to for a long time.

However, studies on the effect of desensitization are more focused on violent information, which cannot explain why audiences are desensitized to serious information related to the epidemic promoted by mainstream media.

Therefore, starting from the information cocoon and desensitization effect theory, this paper tries to answer the following questions: Why users do not pay more attention to the topic that needs long-term attention, but instead divert their attention? What are the causes of this phenomenon.

## 3 Method

This study tries to answer the above questions by questionnaire survey method.

### 3.1 Put forward hypotheses

This paper will use the information cocoon room theory and desensitization effect theory, based on existing research, this study makes the following assumptions:

H1: The more media publicize an event, the more likely it is to form an information cocoon, and the more likely it is to form an echo wall effect, and the greater its influence.

H2: When the propaganda reaches a certain peak, the larger the propaganda, the more likely it is to form a desensitization effect, and the smaller the audience reaction is likely to be.

In order to prove the hypothesis, this study adopts the method of questionnaire survey to sample the whole population and make a questionnaire.

### 3.2 Sampling method

The research object corresponding to this hypothesis is the whole social group. First, we conduct representative sampling of this group and select the whole social group as the research population. Secondly, we compile the sample box of the population according to age. Thirdly, stratified multistage sampling is performed on the sampling frame with a 95% confidence interval and a sampling error of 3%.

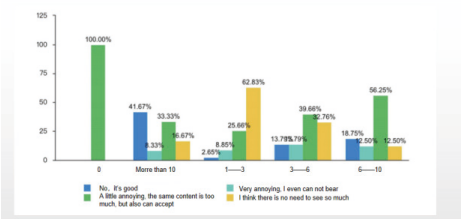
Data collection, collation and analysis of this survey was completed on June 24, 2021. The survey mainly included closed questions, and the main contents are as follows :(1) Confirmation of basic information, including age and gender; (2) Sentence reduction of independent variable publicity amount; (3) Sentence reduction of dependent variable publicity effect.This questionnaire contains 16 questions, all of which are single choice, and is distributed through wechat moments, QQ space, star sample database, Weibo and offline.

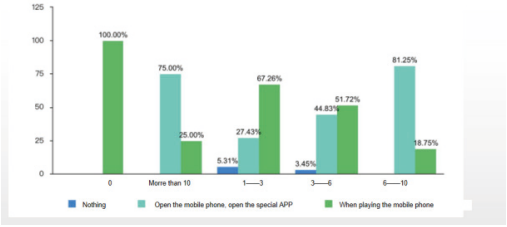
## 4 Research findings and discussion points

### 4.1 Data screening

The returned sample size of questionnaires was 511. After excluding the samples that took more than 30 seconds to fill in the questionnaire and the questionnaires that did not select option 3 in question 9, the final number of valid questionnaires was 403, which passed the consistency test.

### 4.2 Discription of the data



According to the survey on the subject, 60% of respondents think the information about epidemic is important, and 25% think the information on eidemic is generally important.

### 4.3 Data Analysis

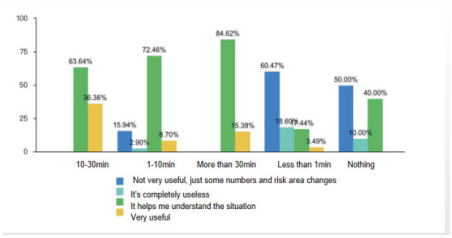
4.3.1 How many pieces of information about epidemic you would receive in a day? &the feedlings when you read homogenized content?

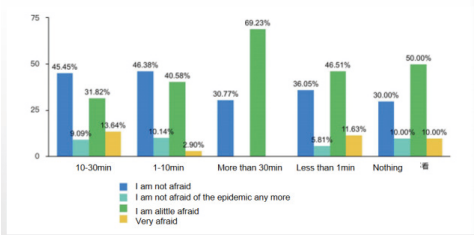
According to the survey, 62.83% of those who read less information found the information annoying, and there was no need to read so much information. Most of them said that the more they read, the more upset they felt. However, 41% of respondents who read more than 10 pieces of information a day said that reading information about the epidemic is an initiative they have.

4.3.2 How many pieces of information about epidemic you would receive in a day? & the condition they read the information?

The survey shows that the more information the respondents receive on average day, the greater probability is that the behavior is initiated by the respondents by opening the mobile phone or public account ; And the fewer messages they read on average day, the more likely they are passively exposed to the information while they are play the mobile phone..

### 4.4 Hypothesis analysis




By comparing the quantity of time spent viewing information related to the epidemic in per day,& Whether the information related to the epidemic is useful to the audience, and the cross analysis between how long they watch the information related

to the epidemic every day and the udience's fear of disease, it is known that: the longer audience read information, the cognition of usefulness would be stronger. Thus it can be concluded tha the longer the audience accept the propaganda of media , the probability of this information is useful would be greater. All in all, the audience take longer time to read such information, they would have deeper degree of fear of the epidemic. Therefore, it can be inferred that when the audience receive media propaganda for a longer time , the emotion of fear will increase, which can prove that hypothesis H1 is valid.

At the same time, it can be seen that the attitudes of respondents changed significantly around the time point of watching for 30 minutes a day. Around the time point of watching for 30 minutes, the proportion of the audience who think the information related to the epidemic is very important decreased significantly. Therefore, it can be inferred that the respondents who watch for less than 30 minutes have a decline in perceiving usefulness of the information. In addition, when the contact time reaches about 30 minutes, the audience who expresses great fear no longer exists, which proves that hypothesis H2 is valid.

### 4.5 Finding

The epidemic prevention and control policy in China has made remarkable achievements, but the epidemic is not over, we still can't slack off. Despite China's epidemic prevention and control effect is good and most of the audience have a right attitude in the face of the outbreak, but judging from the data analysis, a small percentage of the audience is in the process of desensitization of the seriousness of information related to epidemic .Almost all audience admit outbreaks related information is important, which indicates that the mainstream media propaganda has strengthened the audience’s long-term awareness of the issue, playing a good propaganda effect. But even so, some audience still pay more attention to entertainment information while taking less attention to the information of epidemic. According to the data of cross analysis, the author thinks the reasons are as followed:

#### 4.5.1 The epidemic situation is improving, and the audience's fear of the epidemic is decreasing

Generally speaking, the decline of the public's fear of Coronavirus is one of the important reasons. Leventhal once proposed The Parallel Response Model (PRM, later called Parallel process Model). According to this model, the audience accepts the advice in fear appeal because they want to control the danger, which is a cognitive response, namely ,the risk control response. The refusal to accept advice comes from a desire to control fear, which is an emotional response known as the fear control response. The seriousness of the epidemic has aroused the audience's fear, spawned the emotional response. Therefore, people are paying attention to information related to the epidemic. Today, Great progress has been made in China's epidemic prevention and control. Almost all the people have been vaccinated, and most parts of the country have entered the normal stage. Therefore, although mainstream media and algorithms continue to emphasize epidemic-related issues, the audience's fear of Coronavirus continues to decrease, and the information environment created by media has far less impact on individuals than the real environment. In this case, a small proportion of the audience does not perceive Coronavirus has much impact on them, and therefore becomes less sensitive to such information. According to the survey data, on a macro level, the audience's fear of the epidemic is directly proportional to the amount of exposure to epidemic-related information, which means that exposure to relevant information will increase the impact of information on the audience and cause fear. The main reason why audiences are still not too afraid of the epidemic on the whole is that the epidemic has no substantial impact on life. Most of the audiences are not in the epidemic area, and their life has returned to normal. The seriousness of the epidemic has been dissipated by the environment shaped by information. Therefore, a small number of audiences have "misread" the seriousness of the epidemic and mistakenly think that it is no longer enough to pose a threat.

### 4.5.2 Entertainment information impacts serious information and eliminates sensitive scenes

From our survey, we found that most of the content that audiences are exposed to on a daily basis is entertainment information, rather than serious information related to the epidemic. Under the influence of the algorithm push mechanism, the audience is surrounded by entertainment information and trapped in the information cocoon.

Under the influence of echo chamber effect, the voice of entertainment information becomes louder and louder, gradually covering the existence of epidemic-related information. We can observe, during the period of the outbreak, the mainstream media in the publicity of outbreak related content, intention through the media agenda-setting effects audience concept, however, under the impact of large quantity of entertainment information, a lot of entertainment issues build the audience's cognitive network, through the network agenda setting weakening the importance of epidemic issue. Judging from their initiative in retrieving relevant information and the amount and length of watching relevant content, nearly 60% of them can only see a little information about the epidemic every day, and about 66% of them do not actively retrieve relevant information. It can be seen that even though audiences understand the importance of epidemic-related information, they still do not attach importance to it. In the whole information cocoon constructed by the push mechanism, information is "secondary filtered", and serious information related to the epidemic is selectively ignored by the audience, resulting in decreased sensitivity to such information.

## 5 Conclusion

At present, because of the importance of epidemic issue, China's mainstream media propaganda actively, timely delivery, give full play to its functions to improve the importance of recognition,which has obtained a good effect of publicity. As the situation of epidemic turns possively ,a small number of audience generanlly become slack in epidemic prevention and control. In this study, the desensitization phenomenon of propaganda information is theoretically studied through questionnaire survey, in an attempt to answer the question whether long-term propaganda will lead to the desensitization of audiences to serious information in the Internet era. The hypothesis H1 and H2 are found to be true. This paper proposes the study of audience desensitization effect under the algorithm mechanism, which reflects the development of desensitization effect from classical violence to propaganda. On the other hand, it also provides a certain reference for the propaganda of mainstream media in the context of network and entertainment communication environment in modern China. But this study also found that long-term homogeneity of propaganda can bring the audience to the negative effect of desensitization, this is alarming and worth of reflection. Based on the study, this paper holds that the mainstream media can balance the audience when

publicity related content framework and media framework, with more affinity of voice. However, for some reason, this study also has the following shortcomings. Firstly, during process of colleting the questionnaire, the situation of Shanghai epidemic is becoming positive, Beijing and Inner Mongolia outbreak again,, in this period, the epidemic situation changes frequently, the audience's understanding of the importance of the outbreak may have a deviation and in the different stages, and their attitudes of epidemic may change, which could affect result of questionnaire. Secondly, most of the respondents were aged 17-50, which means the distribution of different age groups was not balanced, leading to a certain impact on the accuracy of the data.

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