Frame of thinking: The influence of short video on the linearized thinking mode of network users

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Abstract: As a new intelligent media, short video not only brings information and entertainment to users, but also has an impact on users' thinking and mind. This paper studies the thinking mode of short video users through the research method of questionnaire survey and in-depth interview: Will short video contact lead to the linearization of users' thinking? Are there any differences in the effects on different users? Why does this happen? It is found that the short video does not linearize the users' thinking mode; the linearization thinking degree of different short video users is significantly different. Finally, this study analyzes the causes of this phenomenon, and further points its practical significance and suggestions for improving short video platforms.

Key words: Short Video, Thinking Mode, News Communication Media ,Public Opinion Hot Events

Introduction

With the rapid development of modern network social media such as TikTok, Kuaishou, Weibo and video account, "short" has become one of the characteristics of this era.This is followed by the lack of systematic logic, and the linearized thinking logic is becoming more and more common. Few use long speeches in speeches and replies, while most are extremely brief.So the impact of short video on the linearization

of users' thinking is exactly what we need to focus on in this paper.

Literature Review

Literature review on linearized thinking phenomena

Linearized thinking refers to the analysis of things with excessive focus on the linear relationship of one cause and one effect, while ignoring the concept of multiple cause and one effect, one cause and one effect, and the system. Research in the field of news communication from the perspective of media development and television production, scholars Qiang Yuexin, Chen Xing in the linear thinking, Internet thinking and ecological thinking —— in China media development thinking evolution path put forward the media development of three kinds of thinking: one-way and single linear thinking, interconnection, interworking and interactive Internet thinking, open, dynamic and forward-looking ecological thinking.It also points out the collaborative use of three ways of thinking media development strategy(Qiang & Chen, 2019). Peng Wei discussed the importance of non-linear thinking to TV editing innovation in the Research on the Value of Non-linear Thinking Cultivation to the Innovation of TV Editing (Peng, 2017). Although these studies study linear thinking from the perspective of psychology and editing innovation, they ignore the influence of media technology on users' linearized thinking.

Literature review of affordance theory

Affordance theory by the American ecological psychologist James J. Gibson was proposed to describe the positive interaction between organisms and the environment. On the Ecological approach to visual perception published in 1979, he defines affordance as the possibility of human action in a specific place, and the specific relationship between people and the environment formed through human perception(Gibson, 1979). Due to some natural characteristics, digital technology has the special effects that affect people's cognition, attitude, emotion and even behavior. Pan Zhizhong, a domestic scholar, introduced "affordance" into the domestic news and communication industry for the first time, and proposed that the supply of new media can be divided into three parts : production supply, social supply and mobile

supply(Jing & Shen,2019). But these studies did not answer questions about the linearization of users' thinking.

Literature review on the phenomenon of short videos affecting users' thinking

Most of the academic research on short videos focus on the influence mechanism of marketing communication and brand operation on users' psychological role, but it has also caused some research based on other perspectives and fields. Foreign scholar, Jeromin F. in Attentional bias in excessive Internet gamers: Experimental investigations using an addiction Stroop and a visual probe, et al. studied the impact of Internet addiction on individual cognitive function, pointing out that excessive use of the Internet causes individual attentional bias and even mental disorders(Franziska & Nele, 2016). In the article The Influence of Video on User Cognition under Visual Communication Vision , scholar Song Yang put forward the view that short videos can expand user cognitive picture, shape users' cognition and embody specific groups' minds from the perspective of visual communication(Song, 2021). In the 2021, scholar Qin Mengyuan publiceded the influence of mobile short video use on individual persistent attention function from the perspective of individual cognitive function, and found that there is a long-term effect of mobile short video use on persistent attention function(Qin, 2021).However, these studies do not study the phenomenon of short video linearizing users' thinking from the perspective of technical availability and functionalization theory.

Problem Posing

This paper will explore the following problems from the perspective of technical affordance theory and cultivation theory:

Will excessive participation in the viewing and comments on short videos linearize users' thinking?Are there differences in short videos affecting different users? Why does this happen?

Research methods

Questionnaire survey method

Hypothesis Establishment

Based on the above problems, the corresponding assumptions are proposed here:

H1: The stronger the contact degree of short video, the worse the degree of linearized thinking of users.

H1a: The longer users exposure to short videos, the more linearized they think.

H1b: The more users exposed to short videos, the more linearized they think.

H1c: The more comments users participate in short videos, the more seriously they linearize.

H2: There are significant differences in the linearized thinking degree among different short video users.

H2a: There are significant differences in the linearized thinking degree of short video users of different genders.

H2b: There are significant differences in the linearized thinking degree of different ages.

H2c: There are significant differences in the linearized thinking degree of short video users with different educational degrees.

Sampling method

The questionnaire survey method was used in this study to sample the whole population and make a questionnaire.

To facilitate sampling, we selected students from Dongbei University of Finance and Economics and Beijing Information Science and Technology University as the study population.This survey completed the data collection, collation and analysis process on July 19, 2021. The survey is mainly closed topics, and the main contents are:

(1) Confirmation of basic information

(2) The use of short videos

(3) Lineization degree measurement

This questionnaire contains 18 questions, including 7 single-choice questions and

11 multiple-choice questions, distributing through WeChat group, circle of friends, QQ space, questionnaire star sample library.

In this questionnaire survey, we selected the hot online public opinion events in the first half of 2021, such as "Bing Dundun becomes the top flow", "Menghualu is controversial" and so on. The standard for examining linearized thinking is whether users can analyze them from multiple perspectives and aspects in the face of hot public opinion events. If users choose less thinking Angle, then the linearization degree of user thinking is more serious.

In-depth interview method

To make further discussion, we adopted an in-depth interview method of semi-structured in-depth interviews with 10 interviewers exposed to short videos, which ended on July 21, 2021. To facilitate the sampling, we selected the students from Dongbei University of Finance and Economics and Beijing University of Information Science and Technology as the overall research population, with telephone interviews as the main way.

Data analysis

In this study, this paper chose 10 in the first half of this year more famous and controversial public opinion events, and designed for each public opinion events different analysis perspective. If the respondents choose more analysis perspectives, the weaker the linearized thinking of respondents, in view and analysis of network hot events, they often stand in a more comprehensive and comprehensive perspective to analyze, so the linearized thinking degree is weak. By calculating the linearized degree of linearized thinking for each of the hot events, the variable linearized thinking degree 1-linearized thinking degree 10 can be get. Then sum the number of analysis perspectives of 10 hot events to generate a variable "linearized thinking degree" to represent the linearized thinking degree of users to be studied in this paper. As can be seen from Table 1 that the linearized thinking of short video users is at a moderately low level.

Table 1 Analysis of the linearized thinking degree of short video users

	least value	crest value	average value
Linear degree of thinking 1	1	6	2.85
Linear degree of thinking 2	1	5	2.46
Linear degree of thinking 3	1	6	2.76
Linear degree of thinking 4	1	8	3.80
Linear degree of thinking 5	1	6	3.53
Linear degree of thinking 6	1	7	3.07
Linear degree of thinking 7	1	5	2.52
Linear degree of thinking 8	1	7	3.06
Linear degree of thinking 9	1	9	3.70
Linear degree of thinking 10	0	5	2.37
Linear degree of thinking (total)	10	64	30.11

First, to test the study hypothesis H1, this paper used Pearson correlation analysis, resulting in Table 2. From table 2, it can be seen that the use time of short video class app and short video contact content shows a significant correlation with linearized thinking degree, and correlation is positive. It shows that short video users contact short video class app longer and focus on more content, the more they tend to consider from multiple perspectives in the analysis of network hot events. There are some differences from our expected research hypothesis. However, all the other variables were not correlated with the dependent variables. Therefore, the study hypothesis of H1 and its subhypotheses is not supported.

Table 2 Correlation analysis between short video contact and user degree of linear thinking

		Short video class app usage duration	Average daily viewing time of short videos	short video content	short video comment on	Linear degree of thinking
Short video class app usage duration	1					
	-					
	205					
Average daily viewing time of short videos	.332**	1				
	0.000					
	205	205				
Short video content	.177*	.369**	1			
	0.011	0.000				
	205	205	205			
Short video reviews	.196**	.187**	0.077	1		
	0.005	0.007	0.27			
	205	205	205	205		
Linear thinking level	.170*	0.026	0.055	.470**	1	
	0.015	0.715	0.431	0.000		
	205	205	205	205	205	
* * Level 0.01 (double tail).						
* The correlation was significant at level 0.05 (two-tailed).						

To test the study hypothesis of H2, the univariate ANOVA test was analyzed here, yielding the following table. From Table 3, it can be seen that the significance level is 0.025, less than 0.05, which indicates that the different gender of short video users is significantly different in the degree of linearized thinking. Specifically, the linearization thinking degree of male short video users is slightly stronger than that of female short video users. The study hypothesis that H2a is supported.

Table 3 Differences in linearized thinking among short video users by different gender

	The number of cases		average value	standard deviations	F	conspicuousness
man		32	25.41	12.70		
woman		173	30.98	12.84	5.102	0.025
amount to		205	30.11	12.94		

From Table 4, it can be seen that the significance level is 0.305, greater than 0.05, which indicates that there is no significant difference in the linearized thinking degree of short video users in different ages. According to this analysis, the main reasons are two points: first, the samples collected in this questionnaire survey are mostly young people, and the proportion of groups over 30-year olds is too low, so it will inevitably lead to errors. In addition, the degree of individual linearized thinking does not necessarily change with age. Whether young short video users or older short video users, there are some people with a strong degree of linearized thinking, which should be closely related to the individual personality, instead of short video.

Table 4 Differences in linearized thinking among short video users of different ages

	The number of cases		average value	standard deviations	F	conspicuous-ness
21Under the age of 13		89	31.18	13.94		
21 ～ 30year		100	29.34	11.27		
From 31 to 50 years old		12	31.92	18.55	1.216	0.305
Over 50 years old		4	20.00	6.16		
amount to		205	30.11	12.94		

From Table 5, it can be seen that the significance level is 0.011, less than 0.05, which implies that the degree of linearized thinking varies significantly among short video users with different degrees. Undergraduate short video users have the lowest degree of linearized thinking, while the short video users of junior high school and below have the highest degree of linearized thinking. This reflects the correlation between the user's personal cultural level and the degree of linearized thinking.

Table 5 Differences in the linearized thinking of short video users with different academic qualifications

	The number of cases		average value	standard deviations	F	conspicuous-ness
Junior high school and below		5	18.60	7.30		

High school or technical secondary school		3	27.67	6.51		
Undergraduate or junior college		170	31.40	13.16	3.839	0.011
Graduate student or above		27	24.37	10.30		
amount to		205	30.11	12.94		

Research conclusions

Short video contact does not lead to linearized thinking

The result of the questionnaire is contrary to the hypothesis " H1: the stronger the contact with short video, the greater the linearized thinking." To explore the causes of this phenomenon, this article adopts the in-depth interview method, which shows the following reasons:

First, short video is not the main channel for cognition. Due to the characteristics of short video, it is not a suitable channel to understand hot events. In the interview, users said that due to the limitation of short video duration and the limitation of users' initiative from the sliding refresh mechanism, they prefer to understand hot events through long video media like Bilibili , or microblog text-based media like Weibo. Thus, the main purpose of short video is entertainment rather than cognition, so it will not have much impact on the way users think.

Second, Media expands users' cognition. People who watch more short videos have more leisure time to use other media to get a multi-perspective view of an event. So the more comprehensive analysis and causality, the less linearized. Media has expanded our organs and cognition, and affirmed the positive effects of a variety of media on human beings. We can see that the impact of short video is not as bad as imagined.

The linearized thinking degree of short video users is different

Through the study, it is found that assuming " H2: the degree of linearized thinking varies significantly between different short video users." found. There is a correlation

between the gender or cultural level of users and their linearized thinking degree. According to this paper, the reason is that the formation of thinking mode is the result of long-term influence, while the rise time of short video is too short, not in the critical period of the formation of all users' thinking. In addition, the more channels users have to obtain information, the lower the linearization of their thinking, which are the reasons for the different degree of linearization of users.

Countermeasures research

In view of all the disadvantages of short video, we should actively explore new ways to improve the media. If the short video platforms can publish long text, it may solve the problem that short video cannot provide the depth and breadth of the content. For the content displayed on the home page of the software, it can list with multiple videos on one screen. Also,it is a good way to introduce the module option of the video list on the promotion mechanism, in order to provide users with the choose opportunity by themselves. More content creators should also be encouraged to join in the production of content in this field to participate in the in-depth discussion and analysis of hot public opinion events.

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