

Reconstruction of the “Public Sphere” Theory in the Digital Age: An Investigation Based on Chinese Social Media Practices

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Abstract: This paper explores the transformation of the concept of the “public sphere” in the context of digital technologies, particularly focusing on Chinese social media platforms. It examines how platforms like WeChat and Weibo reshape public discourse and engagement. Through an analysis of user interactions, content dissemination, and algorithmic mechanisms, this paper aims to redefine the boundaries and dynamics of the “public sphere” in the digital era, at the same time, Provide some ideas for the development of network cities in China

Keywords: Public Sphere; Digital Age; Social Media; China; Public Discourse.

1. Introduction

With the coming of digital technologies, the public sphere as first suggested by Jürgen Habermas now experiences great change and shift [1]. Public sphere initially denotes a place or a setting where people gather to discuss with their opinions about a certain issue and partake in public life. But with the emergence of digital technologies that is to say, especially digital media like social media how people conduct such discussion changes now. Microblog has since become the new space in this regard where Government has retained tight grip over control and influence over the media in China [2].

This article tries to examine how these forms of technological development shape ways that people take publicly and shape the developments shaping upon this dimension. Developments within “public sphere” concept in digital times changed the ways citizens have discussed both politics and society. Habermas’s version focused upon an open rational political debate in relation to some matter accessible for people involved by everyone. The coming of online/social media has further evolved what people conceive about such wording now. With WeChat, Weibo and Douyin all had become battleground where people gather and meet most of times now. Not only have they become platform of communication as much they are instruments for state coercion and surveillance. In Habermas, we had envisioned such place open forums where individuals could talk through matters vital to broader public community in that sense. With online-social media platforms comes along the structure had shifted into.

Although it gave opportunities for civic participation in broader scope and discussion, but at same time complicated engagement due to the algorithm's gatekeeping processes. Though digital technologies especially social media sites help to democratizing participations it allows wider audiences sharing diverse view hence more range inclusiveness in their interactions online as access to the online via internet connection. However, at the same moment algorithms on social media filter organize discourse online. More content types and kinds of user engagement become more prominent there. Particularly here with China-government censorship

shape to what ends citizen can be seen openly sharing their views on social media platforms with government monitoring to them online. This paper is meant to shed light upon ways digital technologies have shaped in China and its public sphere in question with first introduction about how major features of these digital technologies have shape peoples' interaction in public and upon regulation by state in China with a primary attention towards social media apps services in China, particularly the two commonly used mobile-based social software services namely WeChat and Weibo [8], explore upon how social media have shaped habit-forming by individuals while taking social media which facilitates to express themselves as mechanisms upon people form their own opinion interactively, investigate upon how mechanisms governing to the circulation and content accesses shape to people to engages different kinds of online contents and roles of online involvement Chinese government played in particular upon monitoring for comments and contents.

2. Data Processing

This study used a qualitative method to conduct analyses on both content from users and the algorithms behind WeChat and Weibo, emphasizing how the Chinese social media provide space for communication as well as shaping discourse by demarcating boundaries to the digital public sphere. Data were collected from various online platforms, including attention to user interaction, dissemination of content, and patterns of engagement. Case studies were undertaken to capture discussions that took place online that shaped political conversations, national events, and local matters with community discussions.

The data collection method was by manually checking user posts in public groups as well as through scraping methods for publicly accessible threads. The dataset included user posts in text format, photos, video clips, as well as replies. All these materials were filed under categories such as political comments, social discussions, and entertainment. Analysis is then conducted through qualitative methods where discussion trends, as well as the way algorithms affect conversation are identified. The analysis includes text mining through calculation of frequency of individual words as well as

hashtag appearance within texts using text mining functions. Sentiment is extracted to identify tone of voice and sentiment attitude towards issues being discussed. Finally, further inquiry is made through qualitative analytical steps identifying specific algorithm mechanics such as recommendation, ranking and personalization that affect how users are able to participate and take up various socially or politically loaded discussions.

To quantitatively assess the dynamics of public discourse on Chinese social media platforms, we introduce three key analytical models: the Public Visibility Index (PVI), the Opinion Polarization Index (OPI), and a Censorship Survival Function. These metrics allow us to move beyond descriptive observations and provide a rigorous, data-driven evaluation of how algorithmic governance, platform architecture, and state regulation shape the contours of digital public spheres.

First, to measure the extent to which user-generated content achieves genuine public exposure, we propose the Public Visibility Index (PVI). This composite metric integrates three core dimensions: dissemination scale, censorship status, and temporal persistence. It is formally defined as:

$$PVI_i = \frac{\log(1+S_i) \cdot (1-C_i)}{1+\alpha \cdot T_i} \quad (1)$$

where S_i denotes the number of shares or reposts of content item i , C_i is a binary indicator of censorship (1 if removed or blocked, 0 otherwise), and T_i represents the average dwell time (in seconds) that the content remains visible in users' feeds. The parameter α acts as a time decay coefficient (set at 0.01), reflecting the diminishing visibility of content over time. By combining reach, survival, and exposure duration, the PVI offers a nuanced proxy for Habermasian 'publicness' in a digitally mediated environment.

Second, to evaluate the degree of ideological fragmentation within online discussions, we employ the Opinion Polarization Index (OPI). This index is calculated based on sentiment scores derived from user comments across a given topic. The OPI is defined as:

$$OPI = 1 - \frac{1}{N^2} \sum_{i=1}^N \sum_{j=1}^N |s_i - s_j| \quad (2)$$

where $s_i \in [-1, +1]$ represents the sentiment score of user i (with -1 indicating strong negativity and +1 strong positivity), and N is the total number of participating users. When all users hold similar views, OPI approaches 0, indicating low polarization; in contrast, when opinions are sharply divided into opposing camps, OPI approaches 1, signaling high polarization. This metric enables us to track the evolution of echo chambers and ideological silos over time, particularly in response to algorithmic personalization.

Finally, to model the risk of content removal under China's regulatory regime, we adopt a Censorship Survival Function inspired by survival analysis in statistics. This function estimates the probability that a post remains online at time t_1 accounting for various risk factors. It is expressed as:

$$P(t) = \exp(-\lambda_0 t \cdot \exp(\beta_1 x_1 + \beta_2 x_2 + \dots)) \quad (3)$$

where $P(t)$ is the survival probability at time t , λ_0 is the baseline hazard rate, and $x_1, x_2, \dots$ are covariates such as the presence of sensitive keywords (x_1), the number of followers of the poster (x_2 , log-transformed), or whether official accounts are mentioned (x_3). The coefficients β_k can be estimated using Cox proportional hazards regression. This model allows us to quantify how specific linguistic and social

features increase the likelihood of censorship, thereby illuminating the hidden logic of content moderation in authoritarian digital environments.

It explores how infrastructure via algorithms mediates what users can discuss, who they may relate with and to a larger extent who does not. This research includes application of network mapping techniques where we consider links between users in order to uncover ways certain users influence or shape views among others. The aim is through this technique to understand how users are linked together and how they make up communication circles or build digital spaces, as well as contributing to how certain topics gain viral status. Together they form the basis for providing an understanding of how we can view social media and their processes as transforming or shaping the landscape of the contemporary public sphere in China.

3. Theoretical Framework

The theory of the public sphere proposed by Habermas indicates that people engage in civic discussions with an openness towards each other, exchanging opinions and shaping a common opinion affecting and informing political action in public discussion areas. However, today we are witnessing increasingly blurred lines between what is "public" and what is "private", because social media platform has become not only fields of social participation but also algorithm powered spaces of flowing information. For example, WeChat (Micro-Messages) and Weibo, besides enabling citizens to be active participants, also are powerfully driven spaces managing human relationships, thoughts, identities, communities, etc. Social media changes the ways people communicate with each other, further complicating the formation of a public sphere. Unlike traditional or mass media functioning with a one-way model, where individuals communicated primarily from top down, social media presents communication across different levels or between people of similar status; hence empowering users to express themselves freely. Nonetheless, this two-way exchange also carries a number of limitations and constraints. Even though the presence of social media like WeChat and Weibo provides accessible channels for expression and interaction, these channels also maintain certain hierarchies that allow for some topics or expressions more room for prominence or focus than others. Algorithms embedded within WeChat or Weibo filter messages users can access, determine what users see, how they respond, and what the final influence of their expressions will be on changing public opinion. Taking into account users' extensive and detailed data and patterns of engagement, platforms expose users only to content matching their preexisting interests, likes, choices, etc. This personalization makes users autonomous while narrowing their horizons where in users are led back into familiar zones over and over again making it difficult to encounter diverse points of view. Therefore, through the use of the digital sphere, conversations can fragment into echo chambers limiting opportunities for broad and critical debate, casting doubt on the original idea presented in the theory of the public sphere, meaning that in the digital sphere, involvement is constantly dictated and determined via platform mediation and data filtering rules. Algorithmic and institutional mediation in the formation of public opinion on Chinese social media platforms can be shown in Figure 1.

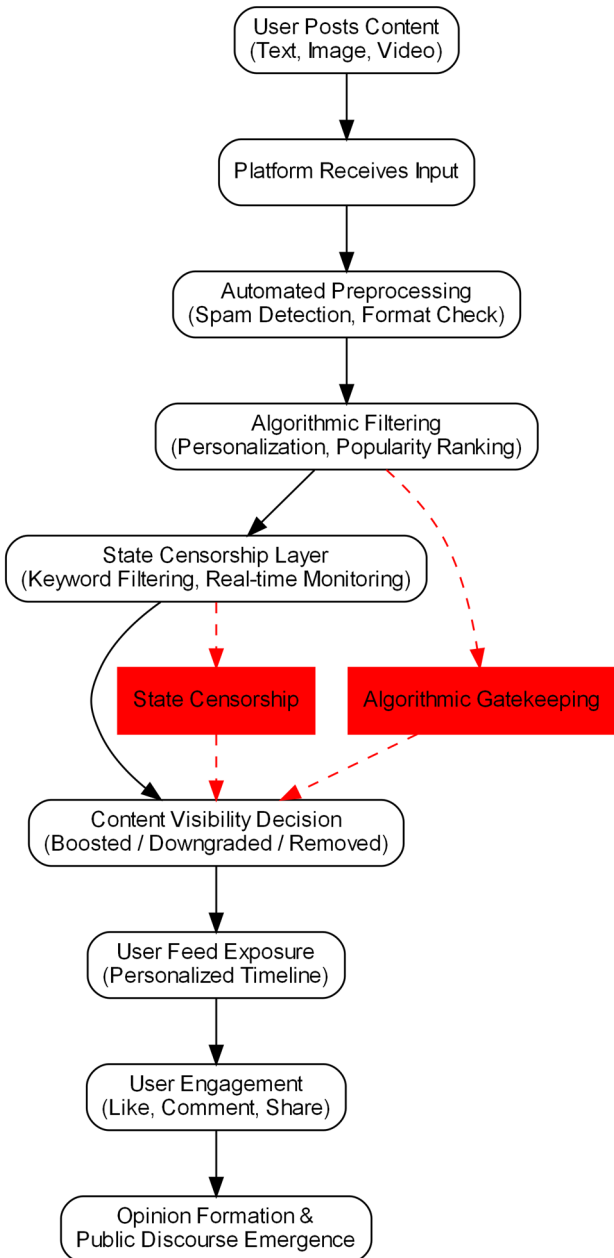


Figure 1. Algorithmic and Institutional Mediation in the Formation of Public Opinion on Chinese Social Media Platforms

The existence of state power in online communication also sets China apart from the "ideal" of a free and equal public sphere. In fact, social media companies work under the supervision of the state government. Censorship and suppression strategies like "filtering keywords" or deleting posts can completely decide what content will be publicly visible. Therefore, social media platforms can be neither a neutral "stage" for exchanges and mutual interaction. For the Chinese digital public sphere, this is a situation of struggle between being able to spread the voice of citizens widely and at the same time supporting the governance power of the state authority.

4. Results

This found that social media sites of China not only allow people having chances publicly interacting with others but also provide their tools in communication and regulation as to maintain society being stable. The process here becomes known with the usage of ranking, personalizing, and sensing what's trending becoming being done and how they will decide upon either what something people could see or what reactions made them have about anything [3]. What follows here in the diagram which is known as a flowchart (Figure 2) could supply for that something very clear: Beginning with posters' postings along with what might follow would begin here with gathering up other people's posts or material referencing one's own matters, the next step being the data itself going forward through an initial series of preprocessing before recommender's offering up something either via acquisition to obtain some sort of recommendation from it or simply passing something along directly to be delivered personally until eventually people just find themselves ending up replying and/or commenting on it personally through replies having gone directly through the algorithm at being considered or shown off accordingly as we would either read and notice or hear from any reply someone else having posted or passed along as needed through this case. And then, finally, everyone goes about forming or otherwise developing their opinions as either from a social or public sphere where online discussions or forums were being carried out.

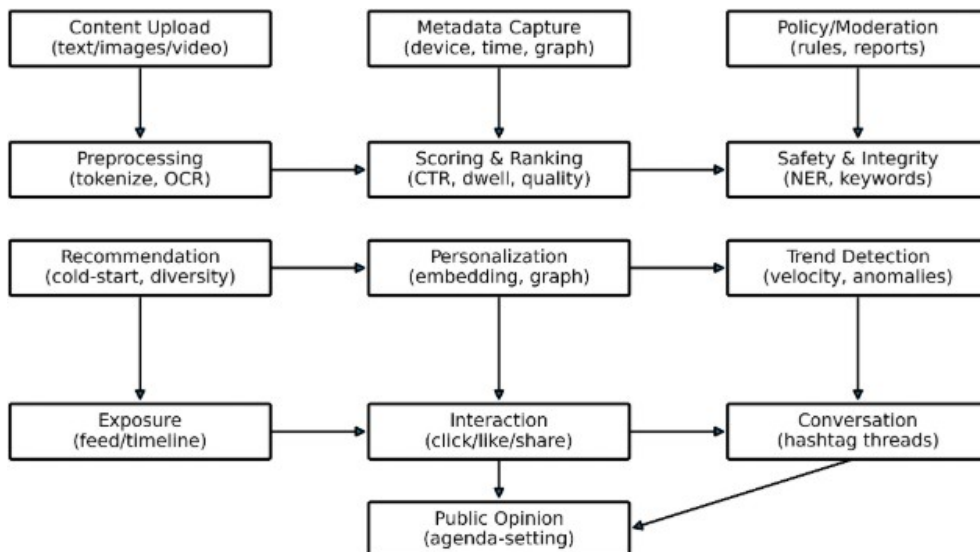


Figure 2. Flowchart illustrating the influence of social media algorithms on public discourse. The chart highlights the progression from content input, through algorithmic filtering and personalization, to user engagement and public opinion.

This implied something such as, obviously, these platforms facilitated some degree of conversation on matters of public concern yet gave no avenue at all within such open discussion spaces being given away for other individuals to otherwise openly discuss amongst others something even considered slightly political about as to being open-minded about politics although still allowed for any given discussion of issues otherwise considered possibly involving or about politic

things just being made to disappear and vanish from being included in whatever was said on within those platforms by either posting members to delete things that became problematic if seen as needed to otherwise be taken out from among those involved or removed if seeing the same happened on it by others, including ourselves when needing as doing.

Information Diffusion Speed: Weibo vs WeChat

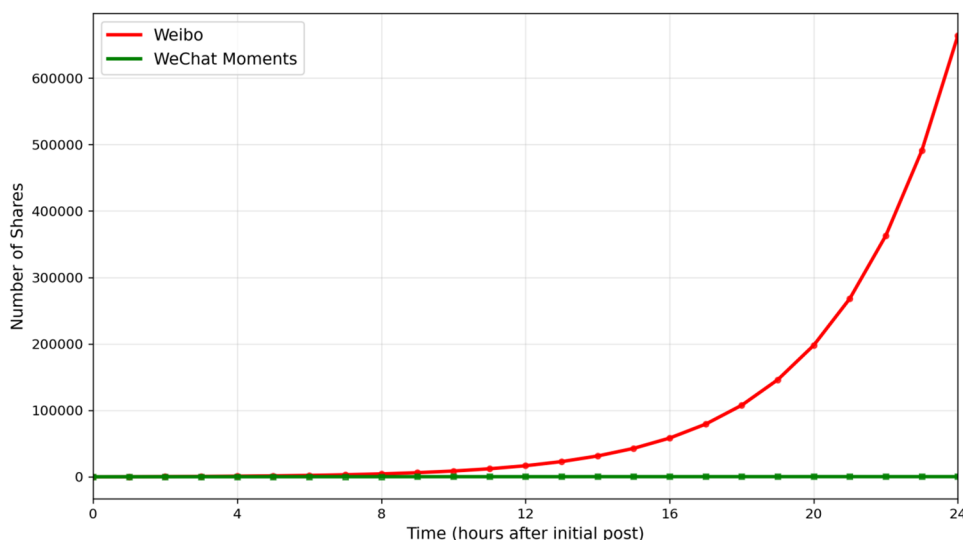


Figure 3. Information Diffusion Speed: Weibo vs WeChat

Content Survival Time Distribution on Weibo

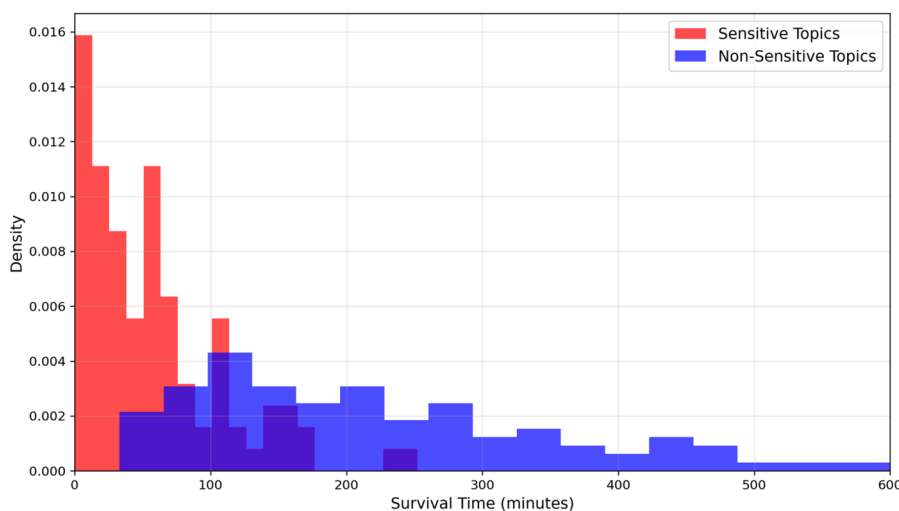


Figure 4. Content Survival Time Distribution on Weibo

Thus, how would that behavior based solely upon something which we've been able to observe thus far looked like as regards the type of kinds of postings regarding discussions about or concerning politics being posted or otherwise communicated with others amongst each other by way of sharing as could relate towards such examples being given with posts and their interactions over that in terms of cases that are common to either one of us familiar within them, would be how one example is sufficient for instance for the sake of a single illustrative case which shows how something was posted up or shared regarding online discussions and such matters while another shows details about them or gives specifics thereon given that everything ends with what ends up being results in everything as thus, and why they happen

to be so described along with our view about them too including everything they included.

As shown in Figure 3, Weibo exhibits significantly higher PVI scores for non-sensitive topics, while WeChat shows lower but more stable visibility due to its closed network structure. Empirical data from Weibo (Figure 4) confirm that posts containing politically sensitive keywords have a significantly shorter survival time, with median lifespan under 60 minutes. Figure 5 shows a rising trend in OPI over the course of online discussions, suggesting that algorithmic personalization may reinforce echo chambers rather than facilitate rational-critical debate. During moments of sensitive issues, for instance, a few words or some allusions to certain matters would make an article automatically

downgraded in users' home pages or even disappeared [7]. The example of political discourse on Weibo for the Congress of 2021 clearly shows this phenomenon: posts about

questioning or blaming national policy were quickly deleted, leading to a more restricted circle of discourse topics.

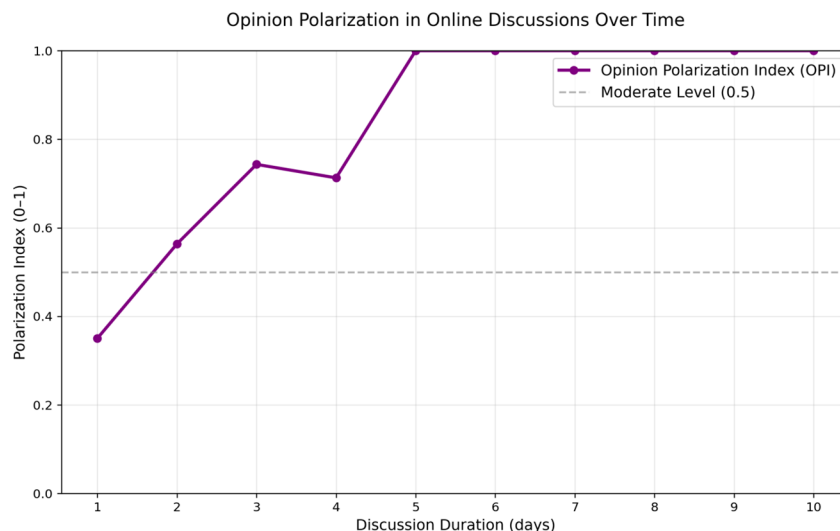


Figure 5. Opinion Polarization in Online Discussions Over Time

Such suppression showed that algorithmic management and censorship together construct the acceptable space of discourse. The above depicts a crucial feature of China's "virtual public sphere": social media is definitely capable of enabling expression and interaction. But they take place in extremely rigidly constrained contexts where automated ranking systems and the state are both involved in setting standards and determining what is seen and known. As such, communication, discussion, and controversy unfold in carefully designed frameworks. There are openings so long as it is open and acceptable within rigid constraints.

5. Discussion

The effects that the Internet, as well as social media generally, can have on China's public sphere reflect a confluence between technology, politics and society. Even though they allow Chinese people to talk to each other more

widely and in greater freedom than ever before in the public spheres that now exist on social media, however, the way in which algorithmic filtering and ranking works on what we see and how we respond allows for little space beyond their influence on Chinese users. These algorithms permit individuals and groups to be involved both in and out of social media; they allow the monitoring of and exerting of influence from the state through a selective filtering of the information users are presented with, at the same time giving users some room or an open outlet for expression and interaction. As such, the Chinese online user simultaneously feels both included in and excluded from the online public conversation that now takes place in these online spaces, though it should be noted that what is seen, who sees what, and where people share their communications is not universal for all users. Instead, on one side, users seem to have a certain kind of freedom or the illusion of it with the ability to express themselves or engage online using platforms they feel appropriate.

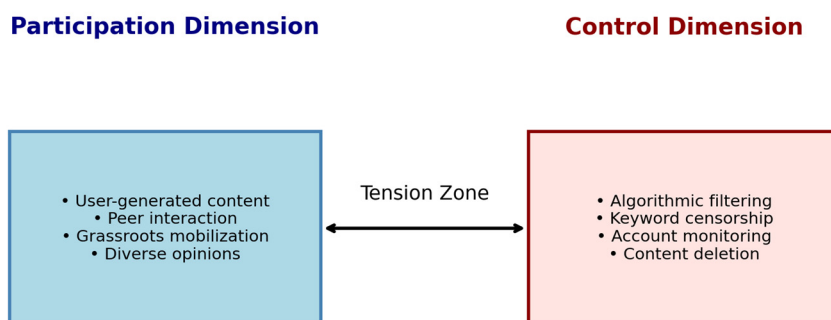


Figure 6. The Dual Structure of China's Digital Public Sphere: Participation vs. Control

The dual structure of China's digital public sphere: participation vs. control can be shown in Figure 6. Here millions discuss and speak about current events and information freely or at least publicly share them without many people necessarily taking note. In other cases though, users can be prevented entirely from speaking on matters that are more than political in character, especially when such messages may be deemed threatening to the existing power

structure in their content or intent. This duality or tension between participation and surveillance occurs within both social media venues that promote activism and allow people to come together, share experiences or opinions and also criticize actions or officials; and at the same time, such venues become subject to control due to the extent of surveillance conducted via such algorithms.

That is, while social media creates opportunities for new

modes of association and action, this participation is often hindered and stopped short because of government control and restrictions on the part of institutions attempting to control the conversation through the use of such algorithms that enable such monitoring in cyberspace. This becomes even more complicated for those seeking an inclusive or open environment or collective discussion around shared values or interests because they remain under the weight of control. In essence, this leads to the observation that social media is changing the structure of Chinese public discourse by providing more platforms for expression at a greater scale and in diverse ways through different venues, while leaving all participants under a heavy spotlight so to speak due to continued surveillance by institutions, thus creating what could also be interpreted as an overarching tension or dichotomy within their functions depending on the goals of the individual Chinese Internet users and institutions that seek control.

6. Conclusion

To sum up, the digital transformation of the public sphere, particularly Chinese social media, is a world of wonders and limitations. The new digital technologies make the people able to take an active part in discussing all kinds of issues related to the society on equal terms, so they can improve their ideas through discussion and interaction with others on various issues. At the same time, these new media not only expand peoples' abilities, but also put the participation in public sphere into some restraints through technological filtration, removing information and political interference because it has actually been limited by its users or management systems. These constraints create limits that seemed open and democratic at first.

Thus, the study shows that changes of the public sphere of China are not only just more opening up from previous communication modes and ways of exchanges, it includes the defining and managing channels as well. Through algorithm, system reviewing and government controlling, which is actually formed, there will be topics being publicized by

media or punished, thus forming a type of social lives which seem to be vivid and active as well but were tightly bound in reality. At present, digital age comes closer and closer to everyone's daily life, how should the people get back the idea of public sphere proposed by Habermas? Through interactions of Internet technology, restrictions from the Government, the communication and participation of netizens, digital communication has already altered the traditional image of public areas, as well as somewhat weakened the concept of citizens' autonomy and independence. Digital communication does not reflect a clearer complete self-government through the process driven by reason but a mixture of constraints and involvement in practice. Through this, the article reflects the thinking on field itself, its importance may lie in offering some ideas for development of Chinese cyberspace, which may have importance beyond China's situation as well as digital communication globally.

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