Review Article

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A Review of Internet-Based Communication Research in China

<https://doi.org/10.1515/omgc-2022-0009>

Received October 1, 2021; accepted January 25, 2022; published online February 16, 2022

Abstract: Since China officially gained access to the Internet in 1994, Internet-based communication has gradually become the dominant form of communication within Chinese society and between China and the international community. Understanding the Internet and its impact on China is not only a key to understanding modern China and its relationship with the world, but also a powerful complement to the classical topics of communication and an indispensable observation on new developments. Combing through the transformation of Internet-based communication research in China, this paper summarizes the achievements in five key areas, reflects on the failures, and makes a call to return to the core relationship between communication and people.

Keywords: online communication, internet in China, digital media, bibliometric

1 Introduction

In 1994, China formally joined the Internet and a new era of communication began. 28 years later, China's Internet has flourished along with the Chinese economy. As of June 2021, the number of Chinese Internet users has reached 1.01 billion, accounting more than 70% of mainland population and for one-fifth of the global Internet population. The Internet penetration rate has reached 71.6%, higher than the global average (China Internet Network Information Center 2021). Many activities in the traditional offline world have been made online. In this sense, China

Article Note: This article underwent double-blind peer review.

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has basically entered the “network society”. Internet-based communication has become the key communication form that sustains the whole society.

At the same time, Internet-based communication research in China has grown from scratch and gradually expanded its reach, becoming not only an independent and distinctive sub-discipline of communication, but also the most popular and contributing field in contemporary communication research in China. Today, it is necessary to review the research history and achievements of Internet-based communication, and summarize the gains and losses on this basis.

Since 2002, studies on Internet-based communication research itself have emerged (Jin 2002), including both reviews of longer time periods (e.g., Wang 2010b) and annual summaries (e.g., Su and Peng 2018). Although the early research on Internet-based communication had a relatively broad vision, the sub-discipline mainly relied on personal observations and lacked objective portrayal. After 2008, many studies tried to create a knowledge map by bibliometrics and other means. For example, Zhang and Du (2017) gave a detailed analysis with the help of citespace software and found that new media research in China formed four main clusters, namely media convergence, Internet-based communication, social media, and big data; new concepts and new vocabulary were emerging; however, it could be spotted that researchers were somewhat blindly pursuing hot topics without focusing on incremental knowledge. Although bibliometrics helps to see the research patterns and future research directions, it cannot directly summarize and judge specific research results by itself, nor can it automatically show the internal and external factors affecting the research directions. Therefore, a combination of scientific knowledge mapping and qualitative literature review is needed (Ma 2018).

In addition, although many scholars have previously conducted quantitative analyses of research related to Internet-based communication, they failed to adequately cover the time period 1994–1996, and after 2016; and the mapping of the sub-discipline remained localized and fragmented (Ma 2018). Thus, an overall picture of Internet-based communication research in China over the past 28 years is yet to be produced.

Based on this, this paper first outlines the overall development of Internet-based communication research in China from 1994 to 2021 through data analysis of a large-scale representative literature sample. Then, combined with the reading of key literature, the research results of each development stage and each important topic are sorted out separately, so as to cover a broad canvas of Chinese Internet-based communication research.

2 Literature Compilation Process

In the data collection process, we selected the period from January 1, 1994 to December 31, 2021 as the time frame, with “Title, Abstract, and Keywords” as the

“search fields”, and a total of 104 concepts such as “new media” and “media convergence” as the “search terms”, and apply the search to four journals included in China National Knowledge Infrastructure (CNKI), *Chinese Journal of Journalism and Communication*, *Journalism and Communication*, *Journalism Research*, and *Modern Communication*. The year 1994 is chosen as the starting point because a heated debate on the information superhighway initiated by the academic community that year is considered the beginning of Internet-based communication research in China (Zheng 2007). These four journals are chosen because they are all rated as core journals of journalism and communication study by “Chinese Social Science Citation Index” (CSSCI) 1999, and are with high citation frequency in the early, middle and current stages of Internet-based communication research (Zhang and Du 2017).

A total of 6727 documents are obtained after the search. After eliminating academic papers whose core topics are not Internet-based communication, and non-academic papers such as lecture reports, interviews with scholars, 3946 papers remained. During the search, we found that papers of *Modern Communication* before 1997 could not be retrieved in CNKI for the time being. Therefore, we conducted another manual screening of papers in the journal between 1994 and 1997 and obtained 11 papers that met the requirements. Final papers that entered the analysis are 3957 in total.

In the data analysis, we use STAI3.2 software as a tool to pick up the time and keywords distribution of research papers, and thus to identify the main stages of research on Internet-based communication in China. Before the analysis, synonyms in the keywords were merged. For example, medium convergence was merged into media convergence); socialized media was merged into social media; public opinion, internet public opinion and microblog public opinion were merged into public opinion; and network governance was merged into Internet governance. At the time of analysis, the last issue of each journal for 2021 had not yet been published. Therefore, the total number of issues for 2021 was not included in the comparison.

3 Findings

3.1 General Overview of Internet-Based Communication Research in China

The changes in the number of papers and the frequency of keywords show that there are clear development phases of Internet-based communication research in China.

In terms of publication distribution by year, Chinese Internet-based communication research in general has shown a clear growth trend, with a nearly 50-fold

Figure 1: Publication distribution by year (1994–2020).

increase in the number of papers published over 28 years. In total, there were three rounds of growth (1994–2001, 2006–2009, 2010–2015) and one round of decline (2002–2005). After 2016, it generally remained stable (except for 2018), maintaining at about 310 papers per year (Figure 1).

In terms of keyword frequency, new media, media convergence, internet, social media, microblog, public opinion and big data ranked in the top seven (Table 1). Among them, internet was the first to appear and reached its peak in 2001, and has remained stable since then. Microblog, social media, public opinion and big data grew strongly in 2011, 2012, 2012 and 2013, respectively. Microblog, in particular, broke the monopoly of new media and media convergence in 2013 and became the most frequently used keyword that year (Figure 2).

In addition to the seven keywords, many other keywords were featured prominently at different points in time. Information superhighway and the fourth media were once popular, and then quickly lost their relevance after 2000. From 2002 to 2005, no new high-frequency keywords emerged. 2006 to 2012 saw the emergence of a number of Web 2.0-related concepts. These include Web 2.0 and social network. And between 2013 and 2016, some new hot topics related to

Table 1: Top 12 high frequency keywords.

Keywords	Frequency	Keywords	Frequency
New media	310	Big data	90
Media convergence	293	Traditional media	87
Internet	196	Internet media	82
Social media	196	Internet-based communication	70
Microblog	131	Social network	62
Public opinion	101	Internet governance	55

Figure 2: Top seven high-frequency keywords distribution by year.

Internet governance started to appear. These include: public opinion guidance, government microblogging, Internet security, and Internet governance. New hot topics after 2016 are mainly related to “intelligence”, such as artificial intelligence and algorithms (Table 2).

In addition to the seven keywords, many other keywords have featured prominently at different points in time. Information superhighway and the fourth media were once popular, and then quickly lost their relevance after 2000. From 2001 to 2005, no new high-frequency keywords emerged. 2006 to 2013 saw the emergence of a number of Web 2.0-related concepts. These include Web 2.0 and social network. And between 2013 and 2016, some new hot topics related to Internet governance started to appear. These include: public opinion guidance, government microblogging, Internet security, and Internet governance. New hot

Table 2: Year in which each keyword was used more than 10 times for the first time.

Keywords	Year	Keywords	Year
Internet	1999	Public opinion	2012
Internet media	2002	Big data	2013
New media	2007	Internet governance	2016
Media convergence	2010	Algorithm	2019
Microblog	2011	Artificial intelligence	2019
Social media	2012	Short video	2020

topics after 2016 are mainly related to “intelligence”, such as artificial intelligence and algorithms (Table 2).

Based on the changes in topic focus as shown above, this paper identifies the stages of Internet-based communication research in China as follows: first stage, 1994–2001; second, 2002–2005; third, 2006–2012; fourth, 2013–2018. The fifth one is 2019–present.

3.2 The Development Course of Internet-Based Communication Research in China

After the reform and opening-up in 1978, with the resumption of teaching and academic research, and the overall opening of the higher education and scientific research system to the West, new developments in the Western media industry and academia began to re-enter the field of journalism and communication in China, including computer-mediated communication and network technologies. However, during the first 15 years, Chinese scholars did not see any dedicated research on Internet-based communication. The first real Internet-based communication research did not appear until 1994 (Zheng 2007). At that time, Chinese scholars were more concerned with terminals connected by the network – the computer – and preferred to define the future as the computer age. In other words, it was not the network but the computer that seemed powerful. The network was just an optical fiber medium to connect terminals for the purpose of communication, which did not look essentially different from the existing telephone and television networks; therefore, for a long time, scholars focused on and studied the “information society” as a whole (Chen 1984; Ju 1984; Lin 1984), rather than the Internet per se. Alvin Toffler of the Third Wave fame thus became the most frequently cited futurist, and profoundly influenced domestic scholars’ understanding of network technology and information society.

On the whole, the number of authors and the amount of literature produced during this period were very limited. Most of the papers are about overseas communication practices related to network technology (Chen 1980; Li 1982; Ni 1983; Ming 1987).

3.2.1 1994–2000

1994 marked an epoch-making year for Internet-based communication. It was not only the first year of the Internet in China, but also the first year of Internet-based communication research. From this year onward, researchers generally recognized the significance of Internet-based communication to the media industry and

communication research, and began to explore it as a specific topic area. This year coincided with the global popularity of the concept of “information highway”. Western countries attached great importance to national information infrastructure, bringing the information network represented by computer networks to the forefront. In China, where the concept of the Internet and new media had not yet emerged, the discussion of the information highway became a precursor to the study of Internet-based communication (Xie 1994; Zhu 1994). This was the official start of Internet-based communication research.

At the same time, the commercialization of China’s Internet flourished. In 1998, with the establishment of websites such as Sina, Sohu and Netease, the Chinese Internet entered the portal era. The concept of the Internet as the “fourth media” after newspaper, radio and television has drawn the attention of researchers. From the initial focus on analyzing how the network (information highway) affected the mass media, to the later emphasis on how the Internet affected communication research, and then to the analysis of the impact of the network on society, especially democratic politics, China’s Internet-based communication research achieved some preliminary results and were gaining momentum fast.

At this stage, the introduction and absorption of Western scholarship on the Internet constituted a prominent feature of Internet-based communication research with enlightenment implications. A number of translations, represented by *Being Digital*, triggered an instantaneous and enthusiastic reading. On this basis, domestic scholars have written a variety of monographs reviewing information highway and the Internet. Several scholars also set up the Digital Forum, and invited Nicholas Negroponte, author of *Being Digital*, as an advisor, to popularize Internet in China by launching promotion campaigns and publishing book series such as *Network Culture Series* and *Digital Forum Series* to explain the Internet in layman terms. Most of these translations and monographs were not dedicated to studying the network from the perspective of communication, but examining the Internet in the motif of humanities and social sciences. Many of the subsequent topics of Internet-based communication surfaced in these works. They provided a roadmap for future Internet studies, but it would take time for them to be “translated” into the language of communication.

3.2.2. 2001–2005

Around 2000, as the government’s perception of the Internet became clearer, the regulatory policy of “network news” has been fully established by relevant administrative departments, and with the business recession caused by the bursting of the “Internet bubble”, the progress of Internet research has been slowed down. One study showed that from 2001 to 2004, the degree of concern of

industry and academia for Internet-based communication declined year by year, reaching the lowest point in 2004, with the number of published papers only at 52% of the 2001 level (Zheng 2007, p. 90). However, with the gradual maturation of communication study itself and the systematic accumulation of previous experience, Internet-based communication research began to improve in this period.

The term “network media” became increasingly popular. A large number of teaching materials and monographs were published, mainly focusing on the impact of the Internet on traditional media, with quite a number of practical studies on news-related topics such as online journalism. Universities and colleges also set up specialized institutions for Internet-based communication to conduct related teaching and research. In terms of research quality, the conceptual thinking on the Internet was further deepened, and the multiple attributes of the network were observed in various dimensions. Theorists such as Marshall McLuhan, Manuel Castells and Cass Sunstein built a presence and a following in China. This was also the heyday of bulletin board systems (BBS) represented by Mop, Tian, Xici and Strong Nation Forum under the *People’s Daily*. The explosion of online forums made studies on Internet community and online public sphere phenomenal. The rise of e-commerce websites such as Taobao brought the Internet economy into view of researchers.

However, in general, empirical and quantitative analyses were relatively scarce, and there were not enough rigorous and standardized qualitative studies either. Repetitive research and fragmentation was prominent. The selection of topics and exposition were relatively arbitrary and lacked academic rigor (Wang 2010b; Zhao 2006; Zheng 2007).

3.2.3 2006–2012

In 2005, the blog, born several years ago, finally reached an inflexion point. China’s earliest blog site BlogChina received 10 million dollars in venture capital; Sina, Tencent, Sohu and other portals made every effort to build a blog business. Blogging became the third largest form of Internet media after portals and BBS. A part of very active Internet users spread from BBS to blogs (mainly Sina blogs) and became the first group of online opinion leaders (commonly known as “Big Vs”). A large number of mass incidents began to attract broad attention, and Internet mobilization and activism emerged. This heralded the beginning of a new era for the Chinese Internet.

This exciting atmosphere began to spread to the academic world around 2006, leading to a new understanding of the Internet and the acceleration of Western concepts such as “new media” and Web 2.0 to replace the old inventory of “fourth media” and information highway as the mainstream research discourse. Research

on public opinion, public sentiment and citizen journalism got the first taste of the spotlight. In addition, a series of stimulating factors, such as the high performance of online media in the 2008 Wenchuan earthquake and the Beijing Olympics, also boosted the related research.

After 2009, microblogging (*weibo*) emerged as a new force and soon replaced blogs as the most powerful digital medium. Microblog sites, especially Sina Weibo, became the curator of a series of major public discussions, such as the Wenzhou high-speed train collision, the Wukan protests, the Qian Yunhui Incident, and the Guo Meimei Incident, which exerted unprecedented pressure on various government departments and organizations. As a result, Internet-based communication research reached a new height in scale. According to one study, “new media” and “weibo” emerged as keywords in the six major Chinese journalism and communication journals around 2008, and related studies surged and peaked between 2009 and 2013 (Zhang and Du 2017). A slogan summed up by Xiao Shu (2010), a commentator for *Southern Weekend*, “Attention is power, onlooking changes China”, represented the optimistic expectation of the whole society for the politically transforming potential of microblogging.

Gauging the impact brought by the rise of the social media, Chinese academics tried to propose their own concepts to describe new developments of the media scene, such as “shared media” (Hu 2007). Researchers also took notice on Web 2.0 applications such as Wikipedia, online QandA, and User Generated Content (UGC).

Another important topic at this stage is media convergence. Data demonstrate that, despite the fact that this issue has been present for a long time, the number of papers published on it did not skyrocket until 2005 (Zhang and Du 2017). In this year, Cai (2005) brought the latest convergent media methods from the United States to China, piqued the interest of many journalism and communication specialists. The government’s promotion of “Tri-networks integration” (refers to infiltration and compatibility between telecommunication networks, broadcasting and television networks, and computer communication networks, see The Central People’s Government of the People’s Republic of China 2005) also boosted researchers’ interest in media convergence. However, related research mainly focused on how traditional media could converge and develop on new media platforms, which limited the understanding of the essence of media convergence (Ran and Dou 2017). Due to a conceptual lack of clarity, “media convergence” means different things to different researchers, and none of them could provide effective, universal and exemplary operation models (Zhao 2011).

3.2.4 2013–2018

2013 marked a turning point for the Internet in China. “A large number of central-level media and provincial and municipal party newspapers opened official microblogs, joining hands with nearly 200,000 microblog accounts of government departments to create a ‘microblogging national team’ to guide public opinions on unexpected events and sensitive issues” (Public Opinion Monitoring Office of People’s Daily Online 2013). All these initiatives had effectively changed the ecology of public opinion on the Internet. Some scholars pointed out that China’s Internet governance had achieved a major shift from virtual to real and from weak to strong (Miao 2014). By 2015, microblogs, one loud voice on China’s Internet as a tremendous source of public debates, basically ceased to be political (Lv 2018). In 2017, the *Cybersecurity Law of the People’s Republic of China* and the *Provisions for the Administration of Internet News Information Services* came into force.

China’s Internet is seeing a new spring in commercialization. In 2013, the Ministry of Industry and Information Technology (MIIT) officially issued 4G licenses to China’s three major telecom operators, namely, China Mobile, China Unicom, and China Telecom. With the launch of a new generation of mobile Internet, killer applications and business models kept emerging: 2014 saw the strong rise of WeChat; in 2016, live streaming and mobile games were in full swing; in 2017, short videos were on fire across the country; in 2019, live-streaming e-commerce became a new gold mine. During this period, as mobile Internet users surpassed desktop Internet users, China leapfrogged the West on consumer Internet innovations: from scan to pay to dock-less bike sharing, from knowledge payment to short video social networking, China’s Internet became a force to be reckoned with in the global cyberspace. The above applications, accompanied by government strategies such as Internet Plus and Made in China 2025, and supported by new trends in cloud computing, big data and artificial intelligence, made Internet-based communication research flourish.

The old topic of media convergence has been combined with new concepts such as industrial Internet and platform media to form a new vision for the future media. For example, Yu (2015) contends that future media convergence will lead to a model of “entrance-level information platform + vertical information service.” Traditional media should strive to become vertical information service systems, using local resources to match and connect various information services.

As historic reforms propelled China from a poor and isolated country, to one of the world’s economic superpowers, how to use the Internet to optimize China’s international image has also begun to become a hot topic of for the government and academia.

By quantitatively examining the network of links between national media agencies on Twitter, Wei and Ding (2015) found that although China had actively

expanded its international reach and has the third largest number of transnational media agency accounts on Twitter globally, these nodes were still in a more marginal position in the media network, ranking even lower than India. The study showed that the social capital of Chinese media organizations in Twitter's global network of media organizations needed to be strengthened.

On the other hand, driven by a series of online events, such as a youth-led patriotic campaign on Baidu Tieba, the study of cyber-nationalism had heated up. After a diachronic investigation, Wang et al. (2016) pointed out that China's cyber-nationalism had experienced three waves. The third wave was exemplified by a mixture of digital populism and popular culture and centered on the post-90s. Influenced by fan culture, this group brought the "battle" experience formed in the process of commercial consumption in star worshipping into patriotic actions. New media and the popular culture industry exerted a great influence on this third wave, especially in ACG (Animation, Comic, Game) culture where national discourse has to be transformed into a coding system of cuteness that can project emotional identity. Guo and Yang (2016) turned their attention to the mass production of mimic symbols (emojis) and pointed out the new logic of collective actions of youth groups in the era of visual communication: as a new type of political participation, online mimics had strong communication effects and infectious power, providing a new mobilization model for cyber nationalist movements.

In general, Internet-based communication in China in this period had improved capabilities to make academic breakthroughs. Therefore, introduction of Western ideas through translation entered a state of diminishing effects (Li and Liu 2016).

New research methodology was updated. In terms of quantification, the rise of social media and mobile Internet made online data much richer and more accessible, providing opportunities for the application of new methods such as social network analysis and big data analysis. Computational communication, as an emerging sub-discipline of communication, became increasingly influential.

On the qualitative side, as the Internet created a new space for social activities, ethnography researches expanded from offline space to online space, gradually forming an Internet ethnography methodology to observe and understand how people conduct social interactions and meaning constructions on the Internet. Studies on various sub-cultures constituted an important part of digital anthropology at this stage, including observations on the *shamate* (a Chinese transliteration of the word "smart") group (defined by young rural migrants sporting eye-catching fashion and colorful hair), LGBT community, otakus, rotten girls, anime and manga groups as well as fandom and participatory culture.

3.2.5 2019–Present

After 2019, China's commercial Internet experienced yet another important turn.

In business, with a high Internet penetration rate and the disappearance of the population dividend, Internet companies are all looking for new development opportunities. Pony Ma, a deputy to the National People's Congress and Chairman and CEO of Tencent, said in an exclusive interview that China's Internet was facing "transformation from a consumer Internet to an industrial Internet", that is, "it is gradually transforming from providing services such as information, search, e-commerce, shopping and social networking to being deeply integrated with various industries" (Xu et al. 2019). This view also triggered echoes in academia.

In terms of regulation, since 2020, regulators have released clear signals of strengthening anti-monopoly in various ways. 2021 has been seen as anti-monopoly year (State Administration for Industry and Commerce of the People's Republic of China 2021). Since then, a number of Chinese Internet companies, including Alibaba, Meituan and Tencent, have been investigated for alleged monopolistic practices. Among them, Alibaba was fined 18.2 billion yuan for "abuse of dominant market position", which set a new record for China's anti-monopoly administrative penalties. The promulgation of the *Data Security Law of the People's Republic of China* and the *Personal Information Protection Law of the People's Republic of China* (Xinhuanet 2017) further indicated that the laissez-faire era of China's commercial Internet came to an end.

At the same time, the images of Chinese Internet companies and entrepreneurs in the public eye gradually got worse. Speeches such as Jack Ma's "996 blessing theory" (Jack Ma said it was a "blessing" for anyone to be part of the so-called "996 work culture" – where people work 9 am to 9 pm, six days a week) (Yang 2019b). Robin Li's earlier saying "people in China are willing to give up data privacy for convenience" (The Paper 2018), together with the impact of Tencent's online games and ByteDance's short videos on teenagers (Yang 2019a) have aroused strong social concerns. Worse still, a series of scandals, such as medical fraud advertisements in search engines, the bursting of the bike-sharing bubble, the murder of a female passenger by a Didi driver, and the sudden death of an employee of Pinduoduo working overtime (Wang 2021), have made "Internet capitalists" the targets of public criticism, and the government was pressured to safeguard the interests of the public. Accordingly, the academic community began to pay more attention to platform capitalism and its algorithmic management of digital labor. Digital worries had become important themes at this stage. Related studies address "overconnectivity", digital divide, privacy infringement and more (Gu 2019; Li 2019, 2021; Peng 2019; Qiang and Xiao 2019; Song 2020).

In addition, the outbreak of the China–United States trade war and COVID-19 during this period and the new phenomena they triggered, such as wolf-warrior diplomacy (Martin 2021; Palmer 2021), crisis nationalism (Schneider 2021), and post-truth publication (Zhang 2019) also forced Chinese scholars to rethink China’s external communication and internal public opinion guidance (e.g., Shi and Tong 2020).

3.3 Core Issues in Internet-Based Communication Research in China

Over the past two decades, a large number of studies have been accumulated in Chinese Internet-based communication research. However, these studies often differ greatly in terms of research objectives, research subjects, and research methods, making it difficult for scholars to understand the full picture and summarize the results. For example, with microblogging as a research topic, some scholars focus on the difference between the use of Weibo and WeChat on the knowledge gap of citizens (Wan and Liu 2021), while others analyze the rise of government microblogs (Zhang and Jia 2011). Those two types of studies are far from each other, and it is difficult to make comparisons and establish connections. Considering such difficulties, this paper develops a classification framework based on five major orientations.

The first is media-oriented research. This type of research usually tries to summarize the inherent properties of Internet-based media, and uses these descriptions as a basis to speculate on the macro impact of Internet-based communication on Chinese society. Representative research questions include “What is new about new media?” and “Can new media bring an ideal public sphere to China?” This is not a strict social science approach, but reflects the humanistic tradition of communication studies.

The second is user-oriented research. This type of research is usually conducted empirically. Either they try to understand how and why different Internet users (including journalists) actually use a particular online medium, or to analyze the impact of Internet use on users. Representative research questions include “What factors influence the acceptance of digital technologies by older people” (e.g., Zhou 2018) and “Does social media help migrant workers accumulate social capital” (e.g. Wang and Li 2015), etc. It is usually a strict social science approach, using empirical methods (e.g. questionnaires) or interpretive methods (e.g. ethnography).

Thirdly, there are phenomenon-oriented studies. This type of research tries to understand what kind of political, economic, and cultural communication

phenomena are produced by users in the process of using Internet media, what are the characteristics and patterns of these phenomena, what kind of impacts they bring, and so on. Representative research objects include Internet incidents, online culture, etc.; representative questions include “What are the influencing factors that promote the outbreak of Internet incidents” (Li et al. 2013). It is more diverse in terms of research methods.

Fourth, there is the research on policies and responses. This type of research is not keen on exploring the current situation of Internet-based communication, but mainly aims to help government departments, companies and organizations to respond to Internet issues. Representative research questions include “how to improve government credibility in the Internet era” (e.g. Zhang and Shi 2020).

The fifth is critical Internet studies. The purpose of this type of research is not to serve the establishment such as government departments and companies, but to analyze critically whether the existing institutions are free and fair, and reveal institutional exploitation of the public. Representative research questions include “how online novel platforms mobilize writers to perform intense labor” (e.g. Hu and Ren 2018).

There are two advantages of this classification. One is that it is comprehensive. The first three of the five orientations are leaning toward *de facto* research, focusing on factual issues such as the status quo, characteristics, and patterns of research objects related to Internet-based communication. The remaining two are leaning toward *de jure* research, which deals with value-based issues such as rightness or wrongness of Internet actions and the feasibility of Internet policies. Not only do they cover the two major research dimensions of social science research – basic research and applied research, and the three major research orientations – empirical, interpretive and critical, as stated by Neuman (2014), but they also do not ignore the humanistic discursive tradition, which is always juxtaposed with the social science tradition.

Such a classification also enhances clarity. By summarizing complex research problems of Internet-based communication into five concise categories, we could gain an easy understanding of overall dynamic patterns. Besides, these five categories are logically and organically related to each other and together contribute to the answer of the ultimate question of communication science, that is, “the relationship between communication and people” (Sun 2014). We use the word “communication” to refer both to an ideal and to an actuality that is only a partial attainment of the ideal. Without exploring how human beings actually use the Internet media, what new communication phenomena arise from their use, and what are the characteristics and effects of these new phenomena, the explanation of how communication affects human will be incomplete. Also, how should people respond to the new communication environment shaped by online media?

The understanding of communication should be elevated from what is to what ought to be. Otherwise, its true meaning to human society cannot be fully presented.

In the following section, the results of Chinese Internet-based communication research will be sorted out from each of these five orientations.

3.3.1 Media-Oriented Research

3.3.1.1 The “Newness” of New Media

As the technological basis of Internet-based communication, new media have naturally become a common research topic. Such studies focus on answering two questions: first, what is new about the new media represented by the Internet compared with the old media; second, what differences exist within the new media.

Early studies usually describe definitive aspects of new media such as digitalization, convergence, interactivity and networking, however, this approach of distinguishing old and new media by certain technical characteristics is too simple to construct a systematic and comprehensive assessment system for all old and new media in a larger context. In contrast, the concept of affordance, as the possibility of action of information technology for actors with specific perceptions and skills introduced by Pan and Liu (2017), provides a new perspective for understanding new media (Table 3).

It can be seen from the above table that Z. Pan constructs three types of affordance (affordance of information production, affordance of social communication and affordance of mobile communication) as criteria to measure the newness and oldness of media. In other words, the higher the level of integration of these three affordance dimensions, the “newer” the media tends to be. This is clearly an effort to refine “new media” in a more abstract way.

In addition to the analysis by affordance, Chinese scholars have also used the keyword “connection” (Gao 2010; Peng 2013; Yu 2016) to show the logic of the evolution of new media in a more intuitive way:

Table 3: Composition of media affordances.

Affordance of information production	Affordance of social communication	Affordance of mobile communication
1 Edit-ability	Greet-ability	Portability
2 Review-ability	Emotion-ability	Availability
3 Replicability	Coordinate-ability	Locatability
4 Scalability	Connect-ability	Multimediality
5 Associability		

The first is the machine-to-machine connection. The pre-Web era had an important breakthrough in solving the problem of computer-to-computer connection, making global Internet possible. The key technologies were distributed network and TCP/IP protocol. Although the connection of terminals facilitated the sharing of information, the information itself was only transmitted between machines as isolated “data packets”.

The second is content connections. This stage of the Internet is also known as Web 1.0, and its important breakthrough lies in solving the problem of aggregation and presentation of content, making all information on the Internet interconnected and turning it into a unified content network, i.e., the World Wide Web. Its key technology was hyperlink. When hyperlinks determine the information organization structure of the Internet, links gain power. The center of links is the center of power. As a result, the Internet was dominated by portals, with homogenized website content as the core. The Internet thus gradually became a mass communication medium.

The third is the connection between people. At this stage, the Internet, also called Web 2.0, had an important breakthrough in the activation of individuals and their relationship networks. Individuals could bypass information intermediaries represented by portals, build their own communication centers, and interact with the outside world through various relationship chains to spread and receive information. The Internet thus entered the age of the individual.

In turn, the terminal connection is upgraded. The Internet became mobile, terminals, people and information could be connected anytime, anywhere, with services always on and working. The scope of information was greatly expanded, making service networks based on big data and algorithms rise quickly. A diverse array of platforms entered the market.

Finally, there is the intelligent interconnection of all things. It might be called Web 3.0, featuring all-round intelligent interactions between the material world and the human world. In the future, any object existing in various environments might become an intelligent agent, which could send or receive information autonomously and achieve intelligent connection and interaction between things, instead of being completely subject to people.

In this hyper-connection, a number of studies have specifically analyzed different applications. For example, blogging was generally believed to be shifting the power of communication from institutions to individuals, and the revolution mainly lies in the production of content. As for the microblogging, for the first time it equipped personal media with the ability to communicate as mass media (Fang et al. 2014). Mobile instant messaging apps such as WeChat mixed mass communication with interpersonal communication and lead to small group

communication. Xiong and Zhao (2016) pointed out that the unique “circle” pattern characteristic of WeChat determined the special nature of its communication and subsequent public expressions. Zhang and Shu (2016) noted that compared with microblogging, WeChat communication was characterized by “circle segmentation” and “hierarchical interaction”.

3.3.1.2 New Media's Impact on China

Based on the analysis of the communication characteristics of new media, scholars have further explored the impact of these characteristics on individuals and society, thus building a logic of “change of communication tools – change of communication models – change of living styles + change of communication relationships + reconstruction of values”.

At the macro level, the biggest impact is the reconfiguration of power relations. Yu et al. (2016) pointed out that the development of the Internet in China over the past 20 years had been a process in which information technologies evolved from communication tools, channels, media and platforms to fundamental social elements, which had essentially changed the scenes and ways of human interactions, and promoted the transformation of social relation networks from a “differential mode of association and an “organizational mode of association” to an open, interactive and complex distributed network, triggering a change in the rules of resource allocation and power distribution patterns. As a new source of power, the Internet activates individuals and self-organized groups, empowering the “relatively powerless” in society and shifting power and monopoly resources from state to non-state actors.

The emergence of new media has also reshaped the value logic of many arenas. Several scholars notice that the basic model of journalism has undergone an essential transformation. Peng (2012) points out that audiences can now use citizen journalism as a reference to judge the timeliness, objectivity and comprehensiveness of professional media news reports. The social media agenda is influencing the professional media agenda. Cai and Ling (2020) believe that after interventions of multiple actors in the news field, the boundaries of news are increasingly blurred, bringing a series of outcomes: news becomes the product of collaboration and competition among multiple subjects; journalism is more opinion-based rather than news-based; and the traditional news matrix is overturned by a new narrative of social media.

According to Yi (2017), news values have also experienced great changes, from “being new” to “being live”, from salience to usefulness, from geographical proximity to psychological intimacy, and from human interest to pleasing the crowd. Chen (2019) argues that the charm of news content itself has been replaced by the charm of news rhetoric.

In terms of journalistic practices, Wang et al. (2014) observes a “news implosion,” noting that current professional journalism has become overly reliant on “internal production” (a significant portion of news coverage is no longer focused on the outside world but rather aggregates and consolidates existing news stories), “derivative production” (bypassing hard-to-get core facts in favor of easily accessible peripheral facts), and “redirected production” (a considerable amount of content is not produced by journalists themselves, but redirected from other media). Instead of effectively responding to audience needs for certainty, these reporting methods further confuse people through a massive information bubble. Yang et al. (2018) analyzes the phenomenon of “news drift”, such as inflated headlines and commentaries, the proliferation of fake news, and even the increasing bias of the concept of news.

What exactly does this reconfiguration of power relations and value logic mean? Scholars are divided.

For example, regarding the impact of microblogging on the public sphere, some scholars see microblogs as a distribution center of multivariate information, an amplifier of grassroots opinion and a test zone of communicative rationality. However, at the same time, they also find that the fragmentation of microblog content and communication modes makes microbloggers akin to “a fleeting public” with “bad news syndrome” and “shock experience” (Zhang 2010). In addition, there is a growing recognition that in the space constructed by the social media, the contending parties may not only fail to reach consensus, but may not even be able to figure out what the disagreement is. From Habermas’ original conception, such a space cannot generate the critical consensus in the sense of the public sphere (Sun and Li 2014).

Nonetheless, some scholars argued that the real significance of social media is not to form a consensus, but rather legitimize differences by realizing the visibility of multiple individual subjects, differentiated issues and diverse narratives. Social media has largely changed the original social relations and the way Chinese people participate in the public life. It is “seeing” rather than “hiding” that forms the foundation of the public sphere. Only through “visibility”, i.e., fully displaying differentiated discourses and legitimizing differences, can there be real dialogues and understanding (Sun and Li 2014).

Other scholars have questioned whether China’s microblogging era was really about co-creation and sharing ignited by the imagination of a “civil society”, with reciprocity and mutual benefits as magnets attracting people to join. In reality, that utopian imagination soon failed under capital control, and big-money people were calling the shots on Weibo, making it more and more mired in right-wing populism, and effectively turning the virtual “civil society” into a capital-driven communication enclave (Lv 2018).

The government, as the most dominant agenda-setter, had successfully swayed Internet public opinion. Wang and Yu (2020) found that official media remained dominant agenda setters on microblogging platforms, and that government microblogs were more likely to steer public opinion on topics subject to regulation. In a study of health information dissemination during the 2020 COVID-19 outbreak, Han et al. (2021) found that Party media had a significant influence on social media, and that online agendas of both the public and social media opinion leaders were associated with party media.

However, foreign new media have an impact on China's national image, in a direct or indirect way. Shi and Chen (2020) found through quantitative research that topics on China on the overseas social media were mostly negative, and a significant portion of the criticism of China's political system and human rights status was formed by manipulation of social bots. The proliferation of negative hashtags toward China and the active social bots indicate China's failure of setting the agenda on the overseas social media.

3.3.2 User-Oriented Research

3.3.2.1 New Media Use in Changing Everyday Life

The use of media technologies is an enduring topic in media studies. The Internet provides an inexhaustibly rich research mine for this subject. Relevant studies mainly include two categories.

One category focuses on the communication practices of content producers, especially professional news producers and media organizations in the network age. For example, Wang (2010a) found that under the impact of the dramatic environmental changes brought about by new technologies, three most important elements that constituted the structure of traditional journalistic practices – configurative resources, production rules and authoritative resources – had not actually changed in essence. Whether in obtaining information sources, establishing news production rules, or expecting social recognition, the structural characteristics of traditional news practices still played a stable and constraining role in the current digital news production. Such kind of research enables us to see clearly the “change” and the “invariance” of traditional media in the changing times.

The other category focuses on how users, especially migrant workers, adolescents and college students (Huang 2015; Liu 2017; Wang 2014), women (Cao 2009; Li and Yang 2015; Sun and Hou 2016), ethnic minorities (Sun 2016), and other groups, use new media in the twenty-first century, and how these media affect their lives. By uncovering relevant factors that influence the adoption of media technologies, researchers touch upon social capital, identity, knowledge gap, political participation and well-being of media users in various ways, and observe and

understand how people engage in social interaction and meaning construction on the Internet. For example, numerous studies show that the new generation of migrant workers are active groups using new media (Song 2016; Zhou and Lv 2011), but mainly for communication and entertainment, rather than for actively following public information that is relevant to their interests and actively building professional networks (He and Yan 2016; Wang 2013; Zhou and Lv 2011).

This kind of research helps to break the stereotypes and misconceptions of different social strata. It not only deepens the knowledge of the potential of media technology, but also provides a reference for subsequent thinking about how to improve future communication.

3.3.2.2 Impact of New Media on Individuals

On the micro level, i.e., the impact of new media on individuals, the effects are more diverse, involving many dimensions such as individual perceptions, degree of rationality, self-awareness, and emotions.

For example, in terms of self-awareness, Chen and Hu (2020) find that Douyin provides users with a highly selective self-reference system and promotes a unique value standard, while viewers realize their cognitive selves and accomplish value perception of their social class through aimless immersive viewing, imagination of co-viewers and a specific interactive mode.

As another example, shedding new lights on online dialogue, Jiang and Hua (2014) argues that the decentralization and individualization of new media have made the dissemination of subcultures more like a monologue. People are increasingly self-talking and immerse in a self-created online mini-world.

Cui and Wu (2019) find that Jinri Toutiao (literally “Today’s Headlines”), a news aggregator, is effective in increasing users’ awareness of current news and therefore enhancing their self-confidence, despite the fact that the application presents a mix of serious news, opinion, entertainment and practical information, and the quality of news content it aggregates fluctuates greatly.

Among many studies, one category is relatively special – Chinese people’s use of foreign online media. This category of studies can be further divided into two types: one is the effect of foreign media used by non-diaspora groups (the parties are still in their home country); the other is the effect of foreign media used by diaspora groups (the parties are not in their home country).

For the former, research focused on the effects of new media on the parties’ national identity, trust in government and personal identity. For example, one study found that the use frequency and trust of traditional official media significantly enhanced Chinese adolescents’ national identity, while the use frequency and trust of foreign media significantly weakened adolescents’ national identity (Zhu and Ren 2020).

For the latter, research focused on the impact of new media on the parties' cross-cultural adaptation, sense of identity with the home country, sense of local identity, and local participation. For example, one study found that the diaspora Chinese groups in Britain used Facebook to integrate into local communities, while using WeChat to maintain their social presence and social capital in China. In this way, they "got out" from the established diaspora population from time to time, and were active in different cultural groups and communities with "imagined integration" and "sustained identity", thus living a "two-sided life". This is in sharp contrast with earlier diaspora groups (Zhao 2018).

3.3.3 Phenomen-Oriented Research

With the spread of the Internet and its applications, the share of Internet-based communication activities in human communication practices has been climbing, and the Internet has gradually evolved from a communication platform for a few scientific researchers to a digital society in which ordinary people interact on a daily basis. A large number of communication activities are taking place in this digital society. New politics, economy and culture are also bred in the process.

3.3.3.1 Collective Actions in the Cyberspace

Research in this area mainly focuses on the characteristics of various types of social actions (including but not limited to discursive expressions) in cyberspace. Both general public opinion and specific incidents caught the attention of researchers.

Regarding online public opinion, a number of early studies focused on exploring the applicability of traditional communication "laws" in cyberspace. For example, Liu (2001) examined the factors of "fear of isolation" and "open expression" derived from the basic assumptions of the spiral of silence theory and put them into a network environment, and concluded that the basic conditions of the spiral of silence still existed in cyberspace. At the same time, through the analysis of the "backbone", he revealed some unique effects of the spiral of silence in digital media.

After 2003, the power of online public opinion was truly manifested in Chinese society. If some researchers previously argued that the Internet did not have the same ability of "momentum creation" as traditional media (Liang 2002), a series of later happenings enabled Chinese netizens to demonstrate their power to change the course of events through online public opinion. Therefore, 2003 was called "the Year of Internet Public Opinion".

Since then, after several years of development, in 2008, the influence of Internet public opinion reached a new height: from "Tiger Photo Gage" to Wenchuan Earthquake, from Weng'an Mass Incident to Sanlu tainted milk powder scandal, a series of wide-range incidents with different natures let people fully appreciate the

power of Internet public opinion in shaping and constraining political actions. In June 2008, Hu Jintao, then General Secretary of the CPC Central Committee, inspected the *People's Daily*, and communicated with netizens through Strong Nation Forum, reflecting the importance the central leadership attached to online public opinion. Related research, too, reflects this shift in understanding, as researchers began to refer to the Internet as a new channel for public opinion (Wang and Ding 2004). Moreover, this channel has been effective in public opinion supervision and vigilant online anti-corruption efforts. Du and Ren (2011) found through empirical analysis that the number of online anti-corruption probes increased year by year between 2004 and 2010; and online exposure has shortened the period of corruption investigations and made the punishment of corruption timelier.

Along with the rise of online public opinion, academic research ideas have evolved from testing old theories to trying to propose new analytical frameworks, mainly involving conceptual definition, current situation description, type classification, characterization, summarization, mechanism tracing, and consequence evaluation of specific phenomena.

In conceptual definition, some studies held that although the term “Internet mass incident” was widely used in China, it was in fact a combination of “Internet” and “mass incident”. It continued the official stance of classifying social unrest under “mass incident” and would lead to the stigmatization of online public opinion gathering. A more scientific and accurate term should be “Internet public incident”. However, any Internet public incident leading to serious conflicts reflects the lack of dialogue and communication. The unfolding process of Internet public incident is both a public opinion process and a symbolic construction process (Li and Dong 2012).

It was found in an empirical research that among 160 major incidents from 1998 to 2009, the majority of them played a positive role, and their positive significance was very obvious (Zhong and Yu 2010). Some studies pointed out that the Internet initially shaped a pattern of benign interactions between the government and the netizens, but the subsequent strict regulation led to a decline of activities of online opinion leaders and the fading of the enthusiasm of public expression (Li and Zheng 2014). Other studies specified a phenomenon of “public opinion bubbles”, that is, an excess of online opinions could cause one incident to be overtaken by another in grabbing people’s attention. There were serious problems of abortive attempts to form public opinion and opinion shifting by incident replacement (Zhang 2014a).

To trace the mechanism of mass incidents, Yang (2009) argued that the occurrence of Internet incidents did not depend on resource mobilization or political opportunities. The key factors were the shocking nature of the incident itself and the way it was described: posts that gave moral shock can stimulate netizens’

emotions and mobilize their power, thus brewing online interactions and leading to Internet incidents.

Still, other scholars were exploring multiple factors that could influence Internet incidents. An analysis of a large dataset found that place of occurrence (place) and public appeal (goal) were the necessary attributes that influence the outbreak of Internet mass incidents, different from what is envisioned before, the role of public intellectuals was not as important (Li et al. 2013). One research found that the intensity of exposure to traditional media and the trust in new media were relevant to rural people's environmental protests (Lu et al. 2017).

In consequence evaluation, there have been clear changes over time. At the early stage, perhaps because many researchers came from the public security system, most studies focused on the security impact and social control of mass incidents. These researchers tended to view Internet incidents in the lens of civil unrest in real situations and their value judgments were similarly copied, completely ignoring the contextual differences between the real society and the network society, as well as the changes in mobilization patterns of Internet mass incidents, thus holding obvious negative evaluations (Dong and Wang 2011).

With the entry of scholars from other disciplines, such as communication scholars, the perspectives of related studies have started to become diversified and the positions no longer tend to be extreme. Many scholars affirm the positive significance of online actions, such as alleviating social pressure and providing a discourse space for the disadvantaged groups; however, they also emphasize the need to be alert to its negative effects, such as triggering virulent public opinion and causing governance crises.

3.3.3.2 Cultural Participation in the Network

The Internet not only brings new means of information exchange, but also provides a new space for cultural creation. Researchers have long recognized that the Internet has formed more complex, diverse and colorful cultural phenomena than in the era of mass communication.

Regarding the nature of Internet culture, many researchers see it as a way for grassroots groups to resist the mainstream culture, express their unique values and form identity groups in a ritual way.

Among the many characteristics, "participation" is considered to be common to many subcultures. According to Cai and Huang (2011), various new media, represented by the Internet, have brought a new participatory culture. The network is no longer content-centered like traditional media, but forms virtual communities centered on user-generated content and interpersonal relationships, thus providing a new stage for subcultures that used to be hidden in a niche.

Of course, there are differences between different Internet cultures. Such differences are often related to the characteristics of the media itself that carries this culture. For example, Jiang and Hua (2014) thought that hipsterism subculture (*xiaoqingxin*) presented a great change of style, giving birth to an art of gentle confrontation. Yang (2017) pointed out that Kuaishou brought the Internet back to an utmost primitive grassroots culture, giving equal treatment and discourse power to every ordinary individual.

However, although Internet culture has shown a spirit of resistance, it is generally considered to have limited resistance effect, and is easily incorporated by commercial forces to promote consumerism. For example, the style and taste of the hipsterism subculture have been borrowed by businesses to form a new consumption fad (Jiang and Hua 2014). Shao held that after more than half a century of cultural transformation, resistance was clearly no longer the core feature of today's subculture. If resistance exists at all, it exists only in a way that does not directly confront the mainstream, but "resist carefully, and submit carefully" and "play with oneself" (Shao 2018).

It is also argued that the apparent resistance may actually reinforce established power, such as the domination of commercial forces. In their analysis of overlaid comments (*danmu*), Lv and Xu (2016) held that *danmu* assured the continuous use and consumption of video by viewers. In this process, the users of *danmu* only gain virtual pleasure, but do not decisively change the power relationship between the media and the audience. So-called "freedom" of this experience and enjoyment derives from spending more time and investing more energy than traditional media consumption.

Even if it is not dismantled by commercialization, this resistance can easily deconstruct itself while deconstructing authority. Zhang (2016) argued that the cyber-nationalism represented by youths' patriotic campaign on Baidu Tieba was only a "symbolic resistance", which ultimately led to "imaginary solutions".

Despite its many limitations, some scholars have also looked at the bright side of Internet culture. According to Chang (2015), even if some Internet culture creators eventually chose to compromise with mainstream culture or enter the field of traditional content production, the values, knowledge, skills and thinking methods about cultural production developed in the Internet world would inevitably impact the mainstream cultural production mechanism, thus change some aspects of the mainstream culture dominated by the state and the market, and force them to carry out their own innovations or absorb more diverse cultural perspectives, so as to contribute to the expansion of cultural democracy and even political democracy.

3.3.4 Research on Policies and Responses

From the beginning, China's Internet-based communication research has had a strong affinity for pragmatism. Not only many media-oriented, user-oriented, and phenomenon-oriented studies often end with policy responses; there are also a large number of papers dedicated to policies and ways of implementing policy. Relevant topics involve the guidance of public opinion, the construction of national image, and the transformation of traditional media. Although policy research is usually conducted in a speculative manner and is less academic than strictly social science research, good quality research can touch upon real issues and help deepen the understanding of the nature of Internet-based communication. The prosperity of such research is also conducive to expanding the discipline's discourse power and making it influential in government, business, and other sectors.

Over the past two decades or so, Chinese academia has produced a number of forward-looking and enlightening policy studies. These studies have not only taken the initiative to connect with the best media and user-oriented as well as phenomenon-driven research discoveries, but have also been able to translate these findings into truly relevant policies and responses.

For example, on how to transform traditional media, Peng (2018) proposes three paths: going mobile, going social, and going smart. For mobile transformation, it not only means that audiences are accessing more videos and other content through mobile devices, but also indicates that users' preferences in content consumption have also changed, such as pursuing a more live feeling than in the past, and making decisions of consumptions within seconds. Therefore, going mobile not only means that traditional media need to take mobile video and other mobile content as the new direction of their production and routinize it; meanwhile, it also needs to adapt to user preferences in the mobile era, such as abandoning traditional narrative formula, and striving to form visual highlights in a short time frame. In terms of going social and going smart, L. Peng also puts forward ideas such as "user distribution" and "user productivity".

A good policy research must generate new ideas, or reveal certain points previously ignored by the public, or clarify common misunderstandings. For example, Wang (2021) proposes the idea of "reallocating resources" across different sets of activities in China's communication abroad. He argues that one of the major reasons why China's external communication is not as effective as it could be is that too many resources are devoted to the monopolistic social media platforms in the United States. While it is true that these social media platforms bring together a large number of European and American users, that if their attitudes toward China could be transformed, it would greatly help to shape the international public opinion environment in favor of China. However, it is very difficult to attract the attention of Western users

and increase their favorability towards China in the vast amount of information available on these social media platforms. While the West's super-political marketing does not guarantee persuasive results on the Internet, China's own official information dissemination is even less promising. Rather than wasting resources on these traditional channels, W. Wang argues that some of these resources should be used to mobilize domestic youth to actively take part in China's outbound grassroots activities, using them as messengers of cross-cultural communication.

However, it is also important to note that, despite its high output, research on policies and responses as a whole has so far failed to escape common problems of speaking in generalities and lacking theoretical and conceptual frameworks. A lot of research may be more structured in generalization, but seriously lacking in insights. Except for a few studies that are more forward-looking, most of them lag behind the practice and are just new ways to repeat the existing limited knowledge. The lack of theoretical and conceptual guidance has also led many studies to fundamentally misjudge the direction. For example, many early studies on media convergence simply treat it as a possible panacea to save traditional media, and keep proposing various kinds of convergence strategies, trying to play the role of a "think tank" for media industry. But as Yu (2015) later points out, almost all previous media convergence and media transformation efforts are useless because their development logic is wrong. The most crucial factor is not empire-building, that is, to make media organizations bigger and stronger, but to effectively activate users, so that the resources, values and abilities embedded in each individual could be retrieved, discovered, utilized and integrated through network connections. Based on this understanding of the nature of online media, Yu points out that the future of media lies in platform-building.

3.3.5 Critical Internet Studies

3.3.5.1 Worries About the Digital Society

While the Internet has brought people choices and conveniences, it has also brought new worries. From digital capitalism to digital labor, from digital divide to privacy concerns, these topics have also become the focus of considerable research.

For digital capitalism, Li (2021) pointed out that the rise of platforms and platform capitalism had disillusioned digital egalitarianism. Personal data and relations, which were traditionally non-productive materials, were privatized. For media production, all professional and non-professional social labor was involved in the platform labor system. The subject and object identities of media digital labor were integrated, news, entertainment and leisure activities were interwoven into a capitalist production chain. The entire society was engaged in surplus value production for platform companies.

For digital labor, many Chinese scholars studied how digital labor platforms impact working conditions through qualitative research, such as Qiu's study (2017) of digital labor in ICTs manufacturing industry, Dong et al.'s study (2021) of women in live streaming shows, and Song's study (2020) of players of *Animal Crossing*. J. Song found that the preprogrammed narrative task of the game of *Animal Crossing* transformed the player from leisure to labor; low difficulty, blind boxes, scoring and activity strategies enable players to overcome repetitive boredom; players' content creation and sharing made them active laborers. Two kinds of network systems further intensify labor: the sociality of the host network reinforced commodity fetishism, and the Internet gives rise to different types of playbor groups, resulting in a playbor industry chain around the game.

Regarding the digital divide, Hu (2020c) points out that traditional knowledge gap is only about the differential diffusion of knowledge or information, while today's digital divide is about the quality of use rather than access. In particular, on the mobile Internet, many services are set to "digital" by default, and non-Internet users are at risk of marginalization, which threatens the basic rights of certain groups of people in social life, thus creating the problem of "digital abandonment". The goal of promoting the use of ICT among marginalized groups is not to overcome the digital divide, but to facilitate social inclusion.

For privacy issues, Sun and Tang (2017) suggested that to break the dilemma of "privacy paradox" in the mobile era, multiple layers of online privacy constraints and controls are needed, which include: setting up norms about digital privacy; balancing the right of individuals to control their personal data; accelerating the establishment of applicable and reasonable expectations for privacy; and improving users' digital literacy.

At the same time, the COVID-19 epidemic has created an imbalance between public interest and personal privacy, so Hu (2020b) put forward three principles for striking a balance between the two: firstly, treating public interest as an exception to privacy; secondly, if it is really necessary to restrict privacy for the sake of public interest, proper protections must be established for basic civil rights and personal interests in the restriction process; thirdly, upholding the fair use of information collected during a crisis. The starting point of these principles is that privacy itself is also a vital public interest.

As Hu (2020a, p. 5) summarized, "The fundamental problems we need to solve in the digital society are complex and intractable, such as the conflict between personal privacy and social openness, security and freedom, business and community, government surveillance and individual autonomy, thriving creativity and the protection of intellectual property rights, the increasingly all-encompassing Internet platforms and the much-needed assertion of user rights, to name but a

few. In this sense, the digital revolution is far from over, or the problem of ‘been digital’ is much more serious than that of ‘being digital’”.

4 Reflections on Internet-Based Communication Research in China

Through the years, China has developed a different Internet in the sense of a well-protected ecosystem with unique digital species. This special ecosystem requires that scholars take a unique research path that involves directly tackling local Internet-based communication phenomena in China; relaying between different scholars; starting from empirical research, then rising to conceptual and theoretical research; and finally returning to the core issue of the relationship between communication and people.

An example of such efforts is the study of fandom nationalism. Previously, some commentators (Bai 2016; Hong 2016) have argued that young Chinese cyber-nationalists (e.g., little pinkos) are populist, conservative, irrational, and temperamentally isomorphic to youth conservative trends in Russia and the United States. These judgments lack an empirical grasp of the group and thus cannot constitute a valid theoretical analysis (Wang et al. 2016). Through in-depth analyses of personal experiences and social practices of little pinkos, Z. Wang, H. Wang and H. Liu, have refreshed the scholarly understanding of this group. In a content analysis of the messages on Tsai Ing-wen’s Facebook page, Wang (2016) finds that, unlike previous cyberattacks that were all “hostile, hegemonic, and patriarchal,” the current cyber-nationalism is easily combined with online sub-cultures and emphasizes the practice of emotional play. Wang et al. (2016), on the other hand, point out through a multi-site online and offline ethnographic study, that the new generation of nationalists are also consumers of postmodern commercial culture. For example, in order to give their idols a place in the international competition, Chinese fan groups have long learned to use VPNs, experiencing a multicultural collision in their interactions with foreign Internet users. These experiences not only awakened their sense of national identity (e.g., Chinese fans of Korean stars are often repelled by Korean fans), but also sharpened their ability to engage in a more mature, active, and diverse manner. Liu (2017), on the basis of several empirical studies, proposes a concept of “fandom nationalism” and summarizes its eight characteristics, and points out that new media technologies have not only changed the way nationalist movements are expressed, organized and mobilized, but also dissolved the boundaries of political movements, idol worship, games, personal identity construction, and other behaviors. In turn, the

new generation of cyber-nationalists has successfully domesticated new media in three aspects: time, space, and language, thus generating a new type of nationalism among Chinese young people.

Taking together, these related studies not only enrich the understanding of a particular social group, but also deepens the understanding of the relationship between communication and people in a changing Chinese context.

While we admit Internet-based communication research in China has moved to the right track, there is still a long way to go, due to a number of factors.

Firstly, despite years of development, Internet-based communication research in China still lacks an underlying framework and distinctive elements, inadequate to address complex issues comprehensively and provide articulate responses to the challenges implied by the applications of communication technology in society at large. Very often, researchers are confronted with a rich mine of phenomena and problems, but are not capable of digging out valuable results. For example, to understand the impact of Internet-based communication on people, one must first figure out in what ways people can be affected by such communication – this requires paradigmatic insights; moreover, one has to be able to determine the nature and extent of the impact – this requires methodological innovations. Although the spread of computational communication and online ethnography has brought new imaginations, future research still urgently need methodological and even paradigmatic breakthroughs.

Secondly, the chaotic phenomena make researchers busy with new and constantly changing online realities, and most of the time they can only stay in generalization and induction, and are difficult to grow a real communication theory. The old path dependence has led to a large number of studies that are satisfied with what Wang (2011, p. 84) called “simple descriptions of new media”, such as communication characteristics (timeliness, interactivity, extensiveness, etc.) and communication impacts (decentralization, high efficiency, democratic enhancement, etc.) – which are originally characteristics of the network itself – as a result, every time a new form of new media appears, it will be repeatedly interpreted.

Thirdly, the purpose of some new media studies still focuses on practical guidance and application, which produces a “proliferation of governance response discourse” (Qu and Du 2016, p. 23). In addition to the academic courtship caused by political orientation, commercial and technological “hot spots” have also given rise to many “trendy” studies. Researchers have been busy in flocking to the top and to the bottom, in a superficial way. At the same time, the proper academic standards are often no match for the standards operated by power and cultural codes, resulting in distorted paths of knowledge production (Pan and Liu 2017).

Fourthly, there is a lack of research collaboration and cumulative research. As some scholars point out, the knowledge community of new media research has not

really formed, and academic dialogue and cooperation are lacking (Zhang and Du 2017). As a result, there are few studies that build on previous ones. However, Internet-based communication research usually require large-scale collaboration and investigation. The magnitude of the field and the dispersion of themes also make it more difficult to work alone. Early studies may be conducted independently, but at later times it is necessary to strengthen cooperation in order to improve the overall quality of the discipline.

Due to the above reasons, although Internet-based communication has become a prominent discipline or a hot research field in the humanities and social sciences, and the number of papers is increasing and the research objects are rich, the results are still quite limited in scope and depth. As Zhang (2014b, p. 49) says, “in many cases, journalism and communication research has produced a large amount of superficial expertise. It failed to form a structural and systematic explanatory power, nor could it provide forward-looking inspiration or guidance for practices”, thus constituting a kind of “structural poverty”.

Internet-based communication research has not been out of this “poverty” for decades. To get out of it especially in China, it is necessary to return to the relationship between communication and human beings, that is, to the ontological and epistemological level of how human beings develop communication, and how communication becomes a fundamental process of social or cultural generation and development. The profound changes brought about by digital media are far from stopping at the functional level of satisfying the various needs of Internet users; they are and will continue to construct new ways of human existence and the meaning of that existence. Therefore, Internet-based communication research should aim to deepen the exploration and discovery of the subjective and inner world of human beings by studying the core Internet issues and the personal experiences and social practices of ordinary people. The Internet is not just a technology tool, but has created a whole set of systems and cultures that are closely intertwined with human daily life.

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