China's digital nationalism: search engines and online encyclopedias

Zhang, D.

The Journal of

Communication and Media Studies

China's Digital Nationalism

Search Engines and Online Encyclopedias

DECHUN ZHANG

China's Digital Nationalism:
Search Engines and Online Encyclopedias

Dechun Zhang,[1] University of Amsterdam, The Netherlands

Abstract: Search engines play a vital role in positioning, organizing, and disseminating knowledge in China. Although there is a growing interest in China's search engines, relatively few researches systematically examine their role involving nationalism. In order to address the research gap, this article compares the top thirty search results from Baidu, 360 Search, Sogou Search, and Google regarding the "Meng Wanzhou Incident" while focusing on the overlap, ranking, and bias patterns. Furthermore, this study also analyses the differences between Wikipedia and China's online encyclopedias concerning the "Meng Wanzhou Incident" in terms of content, structure, sources, and their main arguments. This article finds: 1) Chinese search engines favor their own services, thereby offering a unique and selective content bias; 2) Chinese search engines and online encyclopedias only provide Chinese sources that provide national biased knowledge, which raises search bias concerns; and 3) Chinese online encyclopedias offer a strong one-sided argument that is positive to China. Overall, this study finds that China's search engines service the Chinese government's self-interest by rendering overly biased social realities; moreover, they produce a logic of "imagined communities" to promote and stimulate feelings of nationalism.

Keywords: China, Nationalism, Search Engines, Internet Events, Online Encyclopedias

Introduction

In our present society, the mainstream media, such as print media and broadcast media, are not the only information resources, but digital media are playing an important role in meaning-making works (Schneider 2018). China is no exception, as digital media are playing an increasingly more vital role in Chinese politics. When political issues are related to China, aggressive nationalism often dominates China's internet (Leibold 2010). Meanwhile, digital media have already become a vital factor in influencing regional politics and international relations (Gries, Steiger, and Wang 2016; Reilly 2012; Shen and Breslin 2010). Numerous scholars have revealed that digital media, such as mobile phones (Liu 2014), blogs (Esarey and Qiang 2008), and microblogs like Weibo (Tong and Zuo 2014), could have a significant impact on political and cultural issues (Herold and Marolt 2011; Yang 2009; Zheng 2008). However, few researches have focused on digital media search engines, while previous research on search engines generally concentrated on the perspective of technology (Brin and Page 1998), search politics (Introna and Nissenbaum 2006), search quality (Taylor 2013), and social impact (Halavais 2008). Also, "with regard to online searching in China, Western research focused on censorship and policy, while Chinese studies emphasized business strategy, technology and user behavior" (Jiang 2014, 213).

Today, search engines play a vital role in locating, organizing, and spreading information in China (Jiang 2014). Until December 2017, there were approximately 640 million people utilizing search engines in China, and the use of search engines is the second most popular activity (CNNIC 2018). In spite of users relying on search engines to make judgements (Pan et al. 2007), the search results are not precise (Jiang 2014). Thus, users' confidence in the search engine's ability to provide trustworthy results has been violated in the sense that the government has increased its demands on filtering information (Villeneuve 2008). Although there is increasingly more interest in search engines in China, few articles examine the correlation between search engines and nationalism.

---

[1] Corresponding Author: Dechun Zhang, Amsterdam School of Communication Research (ASCOR) Nieuwe Achtergracht 166 PO Box 15793 1001 NG Amsterdam, The Netherlands. email: dechun.zhang@student.uva.nl

COMMON GROUND

In order to determine how nationalism has connected with the current political events through Chinese search engines filtering knowledge on political issues, as well as, how stakeholders in a specific area of society construct a sense of a shared value, this article examines how current political events relate to China. Moreover, this article evaluates how information is presented on China's search engines and its allied online encyclopedias, using the case of a heated topic that made headlines toward the end of 2018: the Meng Wanzhou Incident (孟晚舟事件) (VOA News 2019). The Canadian government arrested the chief financial officer (CFO) of the Chinese company Huawei, Meng Wanzhou, who is also the daughter of Huawei's founder, on December 1, 2018. This action prompted a huge debate in China, despite Canada's claim that the arrest was not politically motivated. The Chinese media clearly asserted that this action was an assault on the development of one of China's prominent technology companies. "The Chinese government should seriously consider the tendency of the US to abuse legal procedures to suppress Chinese high-tech enterprises" (Global Times 2018). Meanwhile, there is a huge debate surrounding digital media. Chinese social media users criticized Canada on Weibo (China's Twitter-like platform) for the arrest of Meng; some users connected this action to the trade war, while some deliberately incited nationalist enthusiasm or pro-government stances (Al Jazeera 2018).

This study reports the differences between the top three Chinese search engines' results: Baidu, Sogou, and 360 Search (also known as Good Search and Haosou.com) and Google's search results, and depicts the differences among allied online encyclopedias as information sources. This article begins with a literature review concerning the nationalism, and growing commercial and political nature of search engines, and also reviews studies focused on the results of search engines in China, followed by a summary of allied online encyclopedias' research. This article analyzes Baidu's, Sogou's, 360 Search's, and Google's query results on the "Meng Wanzhou Incident," with an emphasis on ranking, sources, and bias patterns. Furthermore, this article also analyzes three Chinese search engines' allied online encyclopedias and Wikipedia regarding the "Meng Wanzhou Incident," focusing on content and sources. Finally, all the results will be reported and discussed.

Literature Review

Nationalism and Media

There is no universal definition of nationalism. Smith (1991, 72) defines nationalism as "consciousness of belonging to the nation, together with sentiments and aspirations for its security and prosperity." Then, Giddens (1985) elaborates the nationalism to psychological aspects of nationalism. He suggests that when the nation faces a threat from outside the state, the national symbols offer a mean to support ontological security (Giddens 1985).

Meanwhile, over the last decades, nationalism has received tremendous attention from scholars, since the end of the Soviet Union and the breakup of Yugoslavia (Friend and Thayer 2017). China is not an exception since it became one of the important international powers in the world. Some works exam whether Chinese nationalism is on the rise (Johnston 2017); others examine the history and development of Chinese nationalism (Modongal 2016). The studies on China's nationalism have been long understood as top-down and bottom-up dimensions of nationalistic expression, which means that government or grassroots citizens dominate the nationalistic expression. Some studies highlight the patriotic education and media campaigns (Zhao 2002), while some examine spontaneous and extreme outbursts of nationalism among the Chinese youth (Yang and Zheng 2012). However, relatively few studies examine the relationship between search engines and nationalism in China.

The Logic of Search Engines

Search engines play a vital role when it comes to navigating on the internet (Mager 2017[1]) and have, therefore, become the most popular technique to locate information among internet users (Van Hoboken 2009; Rieder 2009). When search engines first came on the scene, they analyzed website content through keywords and metatags (Seymour, Frantsvog, and Kumar 2011). However, there were also some challenges for early search engines due to the inherent features of the web (Courtois, Slechten, and Coenen 2018). The situation changed by the end of the 1990s, primarily due to the PageRank algorithm, which is one of Google's search algorithms and was coined at the University of Stanford during a research project (Mager 2012). Subsequently, Google continuously refined and supplemented this algorithm (Bawden and Robinson 2009). Thus, the algorithm came about due to the rapid development of technology and media. However, PageRank, as a non-commercial research project, gradually developed into commercial use (Steiber and Alänge 2013). Today, the design of algorithms is inevitably influenced by some values that are market-oriented instead of fairness and representativeness of information (Van Couvering 2007).

Although search algorithms remain a business secret, their means of operation are known (Granka 2010). There are three steps in terms of online searches—crawling, indexing, and ranking (Brin and Page 1998). During the first step, search engines should read and download websites, in order to find updates. Afterwards, in the process of indexing, search engines create a "catalogued database of crawled webpages" (Jiang 2014, 213). Finally, when users do an online search, the search engine will rank the results accordingly. Therefore, ranking plays an important role in determining the relative importance of pages and ranking of results (Jiang 2014). Ranking criteria are, therefore, built into search algorithms, and Google's PageRank is more preferred for the popular websites (Jiang 2014). Some scholars claim that this metric is good for the majority, rather than equality (Cho et al. 2005), and that it promotes available priorities to gain financial power (Introna and Nissenbaum 2006). Recently, the search results situation has not only brought up privacy concerns, but it has also drawn people's attention to the "filter bubble" situation, which implies that search engines have the ability to influence users' opinions and shape their behavior and tastes (Pariser 2011).

Search engines play a central role in building up the technological zone that far exceeds national borders (Mager 2012). Mager (2012) also proffered that search engines have spread specific norms, values, and concepts by providing several services. For example, Google combines its search algorithm with collecting user data, which makes it economically productive (Mager 2017). Some scholars describe Google's economic culture as "informational capitalism" (Fuchs 2010) or "cognitive capitalism" (Pasquinelli 2009). However, Mager (2012) views it as a more critical concept, namely, an "algorithmic ideology," which demonstrates that search engines combine material, technical, economic, social, and ideological means since the capitalist spirit spreads not only from economic and technical practices but also from social practices (Mager 2017, 242).

Chinese Search Engines' Environment

In China, online searches also relate to politics. Because the government has security concerns when it comes to political, social, and economic searches, online censorship is pervasive, and the government will directly suppress online speech or indirectly filter content via the internet company (Faris and Villeneuve 2008). Moreover, Chinese search engine companies have to follow the Chinese government's policies of filtering information that would affect national security, unity, and stability and bury rumors, pornography, and violence (Qiu 1999/2000). There is always a blacklist of banned words and topics; if Chinese search engine companies fail to filter them, this will jeopardize their operating licenses (Levy 2011).

Until 2015, there were more than four million websites with more than two hundred billion individual webpages in China (CNNIC 2016). Furthermore, the Chinese search engine environment is under high surveillance in order to maintain foreign services and monitor domestic alternatives at the same time (Shirky 2015). This strategy was put into force to better control foreign companies, who will face sanctions if they fail to conform to the Chinese authorities' rules, like providing user data to the Chinese government (Schneider 2018). Google is the most salient example. The Chinese government pressured Google to react to hacking and censorship issues, which resulted in Google's exodus from the PRC market in 2010 in order to bypass guidelines set by the Chinese authorities (Drummond 2010). Mainland China is a Google-free zone, in spite of Google still offering Chinese-language services through its Hong Kong-based URL (Schneider 2018). However, there are still some local search engine alternatives in China, such as Baidu, which is leading in the Chinese search engine market with a 56.33 per cent share of the 2014 web queries, followed by 360 Search (29.0%), and Sogou (12.7%) (Schneider 2018.

Wikipedia and Chinese Online Encyclopedias

In spite of search engines facilitating access to knowledge on websites, some websites have become increasingly more popular and have drawn users' attention; Wikipedia is one of these websites (Royal and Kapila 2009). However, as an online encyclopedic, it has been criticized for its credibility due to its somewhat biased user-generated content (Royal and Kapila 2009). Royal and Kapila (2009) also stated that Wikipedia was initially developed as an open information source by Jimmy Wales to allow everyone to edit the content. Over 38 million users visit Wikipedia every month, which is ranked thirteenth on ComScore Media Metrix's Top 50 Web Properties (ComScore 2007). China has some Wikipedia-like online encyclopedias, like Baidu Baike, Baike Sogou, and 360 Baike, and the Chinese online encyclopedias take pride in providing a similar value as Wikipedia on sharing information, which focuses on "verifiability" and "objectivity" (Schneider 2018, 436).

However, most of the researches incorporating online encyclopedias are more focused on the following: Wikipedia as a news source (Lih 2004); Wikipedia risks (Denning et al. 2005); the completeness of Wikipedia coverage (Halavais and Lackaff 2008); and online encyclopedias text and classification (Ren and Li 2016). There are relatively fewer previous studies comparing the differences regarding sources and content among online encyclopedias.

Potential Effect on Search Engines and Online Encyclopedias

The search engine's algorithm depends on users' preferences and the context of searches; thus, every search query will influence the future search result (Courtois, Slechten, and Coenen 2018, 2008). Also, search engines remember the users' preferences and filter the search result based on their preferences. This process is known as a filter bubble, and Pariser (2011) claimed that it will cause some risk since it is possible to narrow the range of accessible online information and, consequently, push users into a self-confirmed psychological comfort zone where they might risk social polarization.

Moreover, there will be more problems when search algorithms are biased or manipulated (Courtois, Slechten, and Coenen 2018). Mager (2018) asserted that search engines have the ability to shape users' behavior. Take Google as an example: "it encourages website publishers to produce their content in a certain way by giving advice on the best way to make and publish content, if they want to be visible on the leading search engine" (Badouard, Mabi, and Sire 2016, 4). Therefore, since search engine users trust the search results (Pan et al. 2007), the majority of users tend to favor the highest ranked results (Kammerer and Gerjets 2014). A third party can also make their information visible in high search rankings (Gillespie 2017). Therefore, when it comes to this issue, we cannot avoid discussing the inherent political qualities of search engines

4

(Musiani 2013). Schneider (2018) proffered that Chinese search engine results are arranged to facilitate the kind of media logic the Chinese government prefers. Meanwhile, search engines have the ability to mediate between users and social reality (Jiang 2014), as well as online encyclopedias such as Wikipedia (Fullerton and Ettema 2014).

Online encyclopedias such as Wikipedia have contributed significantly to knowledge management (Benkler 2006). Oboler, Steinberg, and Stern (2010) stated that Wikipedia has already blurred the line between media frames and audience frames, which offers Wikipedia a chance to spread knowledge (Wales 2008), since everyone can access it (Oboler, Steinberg, and Stern 2010). Also, Oboler, Steinberg, and Stern (2010) noted that Wikipedia is regarded as a trustworthy source, because it requires all the information to have a credible source. Meanwhile, the online encyclopedia is also regarded as a global memory platform, which allows participants to express their ideas (Pentzold 2009). Hence, Pentzold (2009) claimed that online encyclopedias like Wikipedia could play a role as an imagined community since it could allow participants with diverse (cultural, religious, etc.) backgrounds to spread their ideas.

Meanwhile, Chinese search engines also relate to the national identity and the people's sense of belonging to a country (Jiang and Okamoto 2014). Anderson (1983) claimed that a nation is an imagined community, which is constructed by symbolism (Jiang and Okamoto 2014). Therefore, the media play a vital role in constructing a nation as a symbol. Billig (1995) highlighted the media's role in embedding the country. In the digital age, new media are playing more vital roles in forming a national identity (Poster 1999). In the case of China, the Chinese government continually adjusts the Chinese search engines according to its own interests to ensure that nationalism is also incorporated into digital media (Schneider 2018).

Furthermore, digital media can also be viewed as a tool to increase national governance (Perritt 1998), build national intimacy (Imre 2009), and influence its citizens (Morozov 2011). Cyberspace is not the only tool to facilitate Chinese nationalism (Wu 2007), but it is also mediated by the search engine filter (Jiang 2014). In other words, it forms a kind of single voice (Schneider 2018), which creates a type of media logic (Chadwick 2013). From China's search engines to Chinese online encyclopedias, these resources may also facilitate this situation (Schneider 2018).

Previous Research on China's Research Engines

Numerous researches have been conducted on Chinese search engines; however, most focused more on technology, markets, politics, and censorship (Jiang 2014). The exception is the China Internet Network Information Center (CNNIC), which conducts research via search engines to study the market in China and user behaviors, while the effectiveness between Baidu and Google is also examined (Liu, Zhang, and Chen 2010), their retrieval performance (Tan et al. 2005), as well as search engines results on Chinese historical event (Schneider 2018). That said, some researchers have also conducted a comparative search result analysis.

In terms of the comparative search result analysis, the early research has been focused on search engines' effect on knowledge, equality, diversity, and democracy (Spink and Zimmer 2008), or from a technological perspective like stability (Bar-Ilan 1999). There are also a few researches on overlapping and ranking (Jiang 2014; Spink et al. 2006; Vaughan 2004), search engines' results on history (Hellsten, Leydesdorff, Wouters 2006; Schneider 2018), search bias (Cho, Roy, and Adams 2005; Edelman 2011; Jiang 2014; Mowshowitz and Kawaguchi 2002; Pariser 2011; Schneider 2018), and search filtering (Jiang 2014; Schneider 2018; Villeneuve 2008).

Search result is related to the search engines' "political, social and commercial implications in China", which is analyzed by using functions such as overlap, ranking, bias and filters (Jiang 2014, 216). Overlap means that the URL occurs among more than one search engine (Jiang 2014), and ranking refers to the result of occurring sequences in search engines (Spink et al. 2006). Spink et al. (2006) also found that there is an 11.4 percent overlap among Google,

Yahoo!, MSN Search, and Ask Jeeves searches, and those four search engines share 7 percent of the matching top one results. However, Jiang (2014) also determined that Baidu and Google share 6.8 percent of the same URLs on search results, with a 0.8 percent matching top one results. A similar study was conducted by Wang and Liu (2007), and their results revealed that the search result overlap between Baidu and Google was 7.8 percent and 3.9 percent, respectively, when including Baidu, Google, and Yahoo and was based on 11,171 queries in China. Previous studies concluded that the similarity of overlap and rank among search engines is low, largely because of the differences related to crawling, indexing, and ranking in search engine companies (Jiang 2014, 216).

Search bias refers to a situation where the search results systematically favor certain types of content over others (Goldman 2008). More specifically, Edelman (2011) stated that search bias refers to being biased when demonstrating the perspective from the search engines' firm perspective, which means search engines favor their own services and disfavor competitors' products. For example, Google was found to have search results endorsing its own services and arranged a low rank for its competitors' websites (Edelman 2011). China mirrors the same situation (Jiang 2014; Schneider 2018). Baidu was sued by Hudong Baike (a Chinese Wikipedia-like site), since Baidu placed its own online encyclopedia at the top, and ranked its competitor, Hudong Baike, lower (Agarwal and Round 2011). There are also more detailed research notes describing how Baidu ranks its own services in the top five results approximately 60 percent of the time (Jiang 2014). Furthermore, Schneider (2018) compared China's four search engines and Google, and ascertained that these companies prefer to keep their users focused on their respective digital services in terms of their own content and rate their online encyclopedia at the top in terms of rankings. Furthermore, Schneider (2018) compared five online encyclopedias—Baidu Baike, Baike Sogou, 360 Baike, ChinaSo, and Wikipedia—to analyze their sources and content, and concluded that digital media such as search engines and online encyclopedic platforms have an effect on nationalism.

However, China's search engines research still remains underexplored. Most research focuses on "information retrieval, information literacy, market analysis and political censorship" (Jiang 2014, 217), but relatively few consider its influence on nationalism and social implications. Additionally, fewer researches were conducted after Google moved its servers to Hong Kong. The research that has been conducted has been largely focused on Baidu and Google, with relatively less focus on comparing other Chinese search engines. Lastly, few empirical studies examined the differences among Chinese online encyclopedic sites and Wikipedia. In order to address these research gaps, this article aims to compare Baidu's, Sogou's, 360 Search's, and Google's search results in terms of ranking, bias, and filtering. Also, this study also examines the differences between online encyclopedias such as Baidu Baike, Baike Sogou, 360 Baike and Wikipedia in terms of content and sources to examine the relationship between search engines and nationalism.

Methodology

This section will reveal the detailed methods utilized in conducting this research, focusing on search engine selection, keyword selection, and various aspects for comparison. Previous researches on China's search engines have already used Baidu, Google, and Yahoo! as examples (Jiang 2014; Wang and Liu 2007); however, only one study has included other Chinese search engines in their sample (Schneider 2018), with even fewer researches conducted after Google moved its servers to Hong Kong. This article will follow Schneider's (2018) method of utilizing Baidu, Sogou, 360 Search, and Google.com.hk as research samples. Baidu, Sogou, and 360 Search are the top three search engines in China, while Baidu holds the strongest position on the Chinese search engine market, cornering 64.64 percent of the market share in 2018 (Statcounter 2018). Statcounter (2018) also reported that 360 Search came in second with 17.89 percent of the market share in 2018, while Sogou took 5 percent of the market share, ranking third. At the

moment, Google.com.hk is an outlier compared with mainland China's search engines' results. This study queries Baidu, Sogou, 360 Search, and Google's Chinese-language service Google.com.hk for the Chinese search term 孟晚舟事件 (Meng Wanzhou Incident), to compare their first thirty search results in terms of overlap, rank, and bias pattern. In order to enhance the credibility and reliability, all personal search histories were deleted in case the personalized data produced biased information, and a VPN (virtual private network) was used to simulate the searches from a Hong Kong IP address for Google queries.

Although a few researchers also completed similar case studies, their cases studies were largely outdated, like the Nanjing Massacre (Schneider 2018), while the Meng Wanzhou Incident occurred only half a year ago, which could offer more updated information on search engine results. Also, Huawei, as a private technology company in China, is described as a "national company" (Tecent 2018), which is praised as the pride of China, having a close relationship with nationalism. For example, after the Meng Wanzhou Incident, there was a hot debate in the traditional Chinese media, and even the Chinese government's mouthpiece, the *People's Daily*, defended Meng (People.cn 2018). However, China's digital media naturally offered the most interactive and heated debate (Al Jazeera 2018). Lastly, all China's search engines' online encyclopedias have posted about the Meng Wanzhou Incident. In order to explore the differences among these online encyclopedias, a search was made on the four online encyclopedias (Baidu Baike, Baike Sogou, 360 Baike, and Wikipedia) in Chinese on the Meng Wanzhou Incident to compare their structure, sources, style, and main argument.

Result

Overlap and Ranking

An overlap occurs when search engines share the same URLs (Jiang 2014). Out of a total of 120 URLs among the four search engines, nine pairs of links shared the same URL, which accounts for 7.5 percent. More specifically, Google and Baidu only shared one search result, accounting for 1.67 percent of Baidu's and Google's search results. Also, Baidu and Sogou shared two of the same URLs, accounting for 3.33 percent of their search results; while Baidu and 360 Search shared five of the same URLs, contributing to 8.33 percent of their search results. The overlap rate of 1.67 percent between Baidu and Google is much lower than the overlap rate of 6.8 percent in Jiang's (2014) study, and the overlap rate of 7.78 percent in Wang and Liu's (2007) study. Wang and Liu (2007) proffered that the declining overlap among search engines is a trend, since there are an increasing number of websites registering differences in crawling, indexing, ranking, and political filtering among various search engines (Jiang 2014).

In terms of the ranking, China's search engines also have their own encyclopedic services at the top of their search results. Another study documented that "search engines list encyclopedic entries at the top of their rankings, and that they each promote entries in their own encyclopedic services" (Schneider 2018, 435). For instance, Baidu always positions its encyclopedia (Baidu Baike) first; more specifically, Baidu lists its own encyclopedic services within the top two results, with Baidu Baike on the Meng Wanzhou Incident listed first followed by Baidu Baike's article on Meng Wanzhou. Sogou Search and 360 Search also use the same tactic, and prefer their own services, namely, Baike Sogou and 360 Baike, respectively. Google also lists Wikipedia first, while Baidu Baike is ranked tenth. Thus, it would appear that search engines depress its competitors' services. Interestingly, Baidu never lists its competitors' encyclopedic entries like Baike Sogou, 360 Baike and Wikipedia, and this pattern is mirrored by 360 Search that only lists its own product 360 Baike. Sogou Search, on the other hand, lists Baidu Baike, but it is ranked only fourteenth. Google employs the same approach, by listing Baidu Baike at number ten.

Furthermore, if we expand the scope, this study will most likely find that search engines favor their products with a high ranking. In Baidu's top ten search results, Baidu's products

accounted for 40 percent, while only 20 percent of Baidu's search results were from its competitors. The same pattern can be observed with 360 Search, where an astonishing 60 percent of its search results were from the 360 Search engines' company, with no competitors' services listed in the top ten search results. Sogou's top ten results included only 10 percent of Sogou's services, while no competitors' services were listed in these top ten search results. Upon testing Google's test results, the results indicated that in the top ten search results of Google, Google's products accounted for 20 percent.

These findings imply that "users of specific search engines experience the web through very narrow lenses that privilege the contents of the search engine provider and that prevent serendipitous exposure to varied knowledge sources" (Schneider 2018, 435). Meanwhile, search engine users have no idea that search engines manipulate their information retrieval (König and Rasch 2014), and rarely think about comparing the search results among various search engines (Schneider 2018).

Bias Pattern

In terms of bias patterns, this article focuses on search engines' "own-content bias," which means search engines support their own services. As previously mentioned, search engines list their own services among the top-ranked results and depress their competition by listing their services in the lower rankings of the results. This article also determined that search engines put much effort into retaining users of its own services.
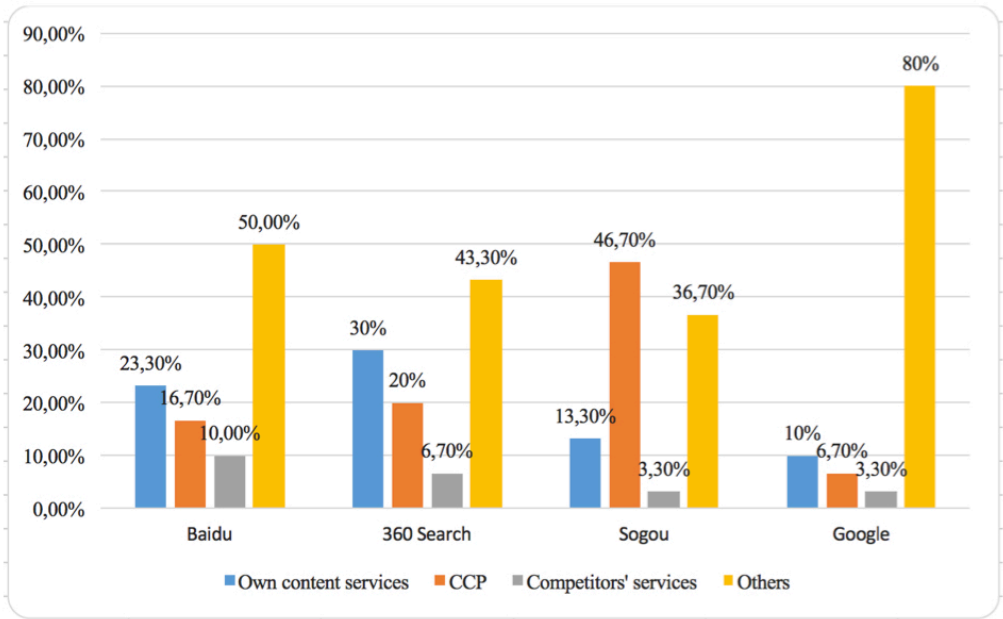
Figure 1: Content distribution and own content-bias among Baidu, 360 Search, Sogou Search, and Google.
Percentage refers to the number of websites with specific sources accounting for the top thirty search results.
Source: Zhang

The results reveal that among the top thirty search results in Baidu's search results, 23.3 percent of all the results represent Baidu's services; however, its competitor Sogou's service rate was only 10 percent, and there were no results for 360 Search's and Google's services among the top thirty search results. The same can be seen with 360 Search where approximately 30 percent of the search results were from its services among the top thirty search results, while its competitors' services only contributed to 6.6 percent with Baidu and Sogou accounting for 3.3

percent each. There were also no Google's services listed in its first thirty search results. Moreover, about 13.3 percent of Sogou's services appear in its top thirty search results, while its competitor, Baidu Baike, only accounted for 3.3 percent (there were no 360 Search and Google services among its top 30 search results). This study, therefore, finds the same results as Jiang (2014) and Schneider (2018), in that their search engines favored their own content. However, it is also worth mentioning that all three Chinese search engines do not offer any Google searches, since Google left mainland China's market (Schneider 2018).

Meanwhile, this study also ascertained that Chinese search engines single out domestic Chinese sources, especially sources from the Communist Party of China (CCP). More specifically, all Baidu's, 360 Search's and Sogou's search results are Chinese related. Among the first thirty search results on Baidu, 16.7 percent were from the CCP, while approximately 20 percent of 360 Search's top thirty search results were from the CCP. Additionally, 46.7 percent of Sogou's first thirty search results were from the CCP. However, Google, as an outlier, has significant differences with only 6.7 percent of its first thirty search results being from the CCP. Due to this study using a Hong Kong IP address for Google, it is understandable that most of the first thirty search results were from Hong Kong (36.7%); however, there were also some search results from mainland China, Taiwan, Britain, the US, Canada and Germany. Therefore, these findings imply that China is using its Great Firewall (GFW; a national filtering system erected at its border) to filter information in Chinese search engines (with servers in China), while search engines with servers outside of China, like Google, remain unfiltered (Jiang 2014).

Online Encyclopedias

Although Wikipedia and Chinese encyclopedias all claim they are "user-generated," they also have some differences in their editorial models. For example, Wikipedia only depends on amateur editors, whereas mainland encyclopedias allow contributions from its users that are not under public scrutiny and are edited by professional editors (Schneider 2018). In terms of the online encyclopedias, this article focuses on its content, structure, sources, and main argument. In terms of content analysis, this study ascertained that Baidu Baike and Wikipedia share some similarities in their text at 11.28 percent. However, Baike Sogou and 360 Baike are the abridged versions of Baidu Baike, and, therefore, share a 64 percent and 74.65 percent similarity, respectively, with Baidu Baike. Schneider (2018) found the same result in that Wikipedia, Baidu Baike, Baike Sogou, and 360 Baike share high similarities.

However, Baidu Baike, Baike Sogou, and 360 Baike not only share high similarities, but also have roughly the same structure. Their articles' general structure all have "event process," "viewpoint of various parties," "influence," and "media comment" sections. The "event process" section of Chinese Wikipedia has a similarity of roughly 76 percent; however, the three Chinese encyclopedias share the same part of "viewpoint of the Embassy of the People's Republic of China in Canada" and "viewpoint of the Ministry of Foreign Affairs of the People's Republic of China" in the section "viewpoint of various parties." However, compared to Baidu, 360 Baike has a section "viewpoint of the French" in the section of "viewpoint of various parties," while Sogou Baike has two sections, namely, "viewpoint of the French" and "viewpoint of the USA" in the main section "viewpoint of various parties." Compared to 360 Baike and Baidu Baike, Sogou Baike not only mentions "influence on stocks" but also references the "negative impact on Canada Goose" in the "influence" section.

If you consider Wikipedia, it is evident that its articles have different structures from the Chinese Wikipedia. Its structure consists of "background", "event process" and "influence." Also, Wikipedia's articles introduce potential reasons why this incident occurred; however, since these reasons are negative to China, it may be why the Chinese Wikipedia avoids mentioning this section. In the "event process" section, the Chinese Wikipedia emphasizes dates, more like a timeline, in order to achieve an outcome that limits the impact of Western countries regarding Huawei's negative comments. However, Wikipedia offers a much more coherent narrative than

the Chinese Wikipedia. In the "influence" section, unlike the Chinese online encyclopedias, Wikipedia not only reveals the influence on stock prices, but also mentions its influence on Sino-Canadian trade, the fact that the Chinese government arrested two Canadian citizens two days after the incident occurred, two cases of Canadian citizens who committed crimes in China who were sentenced to death, and Chinese students who study in Canada and engaged in extreme events. It is striking to find that the Chinese government claims those events are unrelated to the Meng Wanzhou Incident, but its article has some valid sources to support this claim. Moreover, the ninety-five references on Wikipedia that include the media coverage and official documents in two different languages are quite different from the Chinese Wikipedia.

More specifically, Wikipedia has ninety-five references in two different languages, including Chinese and English; however, the Chinese Wikipedia only lists Chinese references. It implies that the Chinese Wikipedia has an imbalanced approach and offers strongly biased information. Also, although Chinese online encyclopedias and Wikipedia both have official documents and media coverage references, Wikipedia's references are more geographical; its articles refer to government documents from China (five documents), the US (four documents), and Canada (one document), while its media references are from China, Hong Kong, Taiwan, Canada, Singapore, the United Kingdom, the US, Malaysia, and France. It is worth noting that most sources are from China and the US (21 and 16, respectively). This could be perhaps the Meng Wanzhou Incident is related to China and the US. Also, Baidu Baike has twenty-five references, which references two government documents and twenty-three media articles. Sogou Baike has seventeen references, which all pertain to media coverage. It is striking to find that 360 Baike only has one reference; however, this reference is inaccessible. Due to the high rate of similarities in terms of context among the Chinese online encyclopedias, but a low rate of similarities in references, it could imply that competitors frequently copy each other's content. Schneider (2018) found the same results in that Baidu's competitors copy its content, which is contrary to their commitment to originality.

Based on the analysis of content, structure, and sources of online encyclopedias, this study determined that Wikipedia and Chinese online encyclopedias have different primary arguments. Wikipedia provides more detailed information regarding the background, process, and influence with relatively more comprehensive sources from nine countries, thereby providing a more coherent narrative. Although Wikipedia's articles are not flawless, it still implies that Wikipedia is an information gatekeeper offering valued subject information. However, Chinese online encyclopedias only utilize single language sources with a narrow scope and use a writing strategy that only focuses on event timelines, rather than the background. Meanwhile, its contents also highlight the standpoint from the Chinese government by using emotive language but avoid mentioning the Chinese government's subsequent retaliation. Chinese online encyclopedias' articles present the Meng Wanzhou Incident as a clear-cut case with a singular truth, providing readers with a sense that China and Huawei are being treated unfairly in order to reduce any negative comments toward Huawei and China and inspire nationalism. It may be due to Chinese search engine companies having to follow the rules established by the Chinese government to filter knowledge (Qiu 1999/2000). Moreover, the Chinese government collaborates with private actors to ensure censorship and spread propaganda via digital media (Stickmann 2013).

Discussion

In recent years, search engines and their online encyclopedic services have been gaining increasingly more power in filtering users' information sources. Also, scholars are concerned about government censorship and its effect on society. This article aims to examine Chinese search engines' and its online encyclopedic services' effect on nationalism in the Chinese context.

Internet Filters

This article has already examined the GFW's huge effect on filtering political issues. For example, Chinese search engines' search results are pre-filtered. A closer look at search results reveal they are all from China, with a large number being derived from the CCP. Meanwhile, its contents are all positive toward China. However, Google's search results that come from outside the mainland are more diverse. This could imply that Chinese search engines' self-censorship and the GFW both have an influence on its search results.

By employing filtering from the GFW and search engine companies, the traditional ways of top-down propaganda in China have been altered to a two-tiered system (Jiang 2014), which means it is centralized and decentralized to propaganda. In terms of its centralized feature, the state's own media still play an important role by promoting propaganda through its radio, TV networks and newspaper channels. However, in the age of digital media, propaganda has a decentralized feature, which is delegated to search engine companies. Chinese search engine companies not only follow the rules established by Chinese authorities to delete the "negative" content (Levy 2011) but also collaborate with the Chinese government (Stickmann 2013).

The internet filter has had a negative effect on public discourse and memory since search engines play a role as a navigator of information. If some content and events are deleted by search engines, many people may have a sense that this issue never occurred, which "rewrites" history. As Pariser (2011) stated, algorithms can narrow users' scope to view the world. As applied to China's nationalism, Chinese nationalism is mediated by a search engine filter (Jiang 2014) and forms a single way of thinking and voice (Schneider 2018). Consequently, it will reduce negative feelings regarding China, and that China and Huawei are doing nothing wrong. This gives users a sense that China and Huawei are treated unfairly since there are ideological differences between China and Western countries.

Search Engine Bias

Recently, search engines have become a target for favoring their own content (Edelman 2011); more specifically, Baidu was accused of unfair competition (Agarwal and Round 2011). Furthermore, previous studies have already examined that search engines favor their own content but disfavor their competitors' content (Jiang 2014; Schneider 2018). By investigating four search engines' links and rankings, this article found that search engines have their "own-content" bias, which is the same as Jiang's (2014) and Schneider's (2018) results. For example, nine weblinks among its top thirty search results are the 360 Search engine firm's products, while its competitors like Baidu and Sogou only have one link among its top thirty search results each. Meanwhile, it is also worth noting that there are six links from the 360 Search company among its top ten search results, while its competitors have zero. There is another salient example that Baidu's search results only provide its own online encyclopedic service, yet its competitors' online encyclopedias are absent. However, the "own-content" bias issue is hard to handle, since numerous factors are given in the ranking and correlation calculations, which validates the search bias (Jiang 2014).

It is interesting to find that all three Chinese search engines did not show Wikipedia (foreign link). Taking a closer look at the data, it is worth noting that all three Chinese search engines only provide sources from mainland China; however, Google's search results are more diverse (from Taiwan, China, the US, the UK, etc.). This phenomenon could be viewed as Chinese search engines offering a kind of "national" bias, which means the search results they provide have a single value. By looking closer at its online encyclopedic services, the result is even more significant. Although their contexts share a high rate of similarity, their sources differ. However, all three Chinese Wikipedia' sources are from China. Consequently, their positions are favorable to China, and the article is written from a Chinese perspective. For example, all three Chinese

encyclopedias mention the Ministry of Foreign Affairs of the People's Republic of China to criticize Canadian and US actions. However, the Wikipedia article uses ninety-five sources from nine countries with a more neutral viewpoint. Meanwhile, compared to Wikipedia, the Chinese Wikipedia is using different writing styles and structures to reduce any negative impact and commentary on China. Overall, Wikipedia is as an information gatekeeper providing objective information, but the Chinese Wikipedia's articles have a strong biased position; regarding this issue, it is a clear-cut issue.

Furthermore, "national" bias what Chinese search engines provide means search results' links are from China, and the links' viewpoints are positive toward China. As Schneider (2018) noted, the Chinese government has recognized the power of digital media and use it as a tool for national governance. Hence, Chinese search engine companies not only abide by the Chinese authorities but also work with the Chinese government. Finally, Chinese search engine results are arranged to facilitate a media logic, which the Chinese government prefers (Schneider 2018).

However, biased patterns may manipulate users, since search engines have the ability to shape users' behavior (Mager 2018). Chinese search engines and their online encyclopedic services can be manipulated to provide biased information; thus, users consistently read biased information, which constructs a mindset with a biased perspective. It also implies that users and social reality can be mediated by search engines and its online encyclopedic services (Jiang 2014).

Searches, Social Reality and Nationalism

Search engines have a certain amount of power that is not only based on their engineering superiority and influence as a media but also their ability to mediate social reality (Jiang 2014). Search engines have the ability to rearrange the information order, and "they can redirect, reveal, magnify, and distort the online world" (Grimmelmann 2010, 435). Thus, search engines as an information gatekeeper can construct social reality. Meanwhile, search engines' online encyclopedias blur the line between media frames and audience frames (Oboler, Steinberg, and Stern 2010), giving them the opportunity to the spread kind of knowledge (Wales 2008), which facilitates search engines to construct a preferred social reality. Jiang (2014) also suggested that search engines have the ability to shape users' perception of the world. Although the overlap rate among search engines is low (7.5%), search engines' ability to construct social reality cannot be underestimated. Although search engines provide varying results, they can also construct a different sense of social reality (Jiang 2014). However, in this case, we cannot avoid discussing the inherently political qualities of search engines (Musiani 2013). Also, Chinese search engines and their online encyclopedic services can produce and reproduce a type of collective or single political voice.

As previously discussed, search engines and their online encyclopedic services have the ability to shape users' behavior, rewrite the story, and construct a sense of social reality, which could have a significant impact on nationalism. China has already admitted the power of mass media and is applying its efforts toward controlling digital media (Schneider 2018). However, with the inherent features of digital media, the Chinese government uses a two-tiered system for propaganda, as previously mentioned. In terms of digital media, firstly, the Chinese government is working with Chinese search engines to filter its content. The Chinese government forces search engine companies to spread biased views or even rewrite articles such as the Meng Wanzhou Incident. The search results are mostly concerned about the incident relating to the United States' fear of Huawei's 5G technology, the trade war between China and US, etc. Thus, it only reflects parts of the issues to the users. Secondly, Chinese search engines are providing information with a biased position and from the perspective of China, and offer online Chinese encyclopedias with a strong biased argument by providing biased reference sources and writing strategies. Thirdly, since search engines have the ability to order information and online encyclopedias have the power to spread knowledge, a sense of social reality that China and

Huawei are treated unfairly is constructed, because Western countries are afraid of China's growth and economic strength. Although search engines and their online encyclopedias have not specifically mentioned this, they could bring up feelings of deep-rooted humiliation and righteous anger.

Overall, as far as the Meng Wanzhou Incident is concerned, the Chinese internet is more likely used as a platform to reflect official narratives, instead of being a forum. Users have fewer opportunities to make their voices heard, but more are more likely to receive information. However, it does not mean that the content on the Chinese internet is only chauvinistic. The Chinese government's strategy on disclosure concerning the Meng Wanzhou Incident is to simplify the complexities. On the one hand, the sources from outside of China are rare or only appear if supportive of China. On the other hand, the narrative on the Meng Wanzhou Incident is to simplify the issue by focusing on the timeline but avoids discussing the complex reasons behind it. As Schneider (2018, 446) noted, "politically sensitive web discourse in China remains relatively homogenous." Meanwhile, the narrative of the articles that search engines provide is emotive, which is used to facilitate and trigger nationalist sentiments.

Concerning the narrative approach of the articles that search engines provide, this study found that Chinese online encyclopedic articles have two main features in terms of narrative strategies: 1) use of emotive language to view the Meng Wanzhou Incident as a national issue and 2) highlighting that Huawei and China are treated unfairly. At a closer inspection of Chinese search engines' results, the same patterns of use of emotional language and highlighting that Huawei and China are treated unfairly are revealed. Meanwhile, some articles also describe Huawei as a "national company," which means Huawei as a private technology is the pride of China, thereby constructing a sort of imagined community (Anderson 1983). Anderson (1983) also suggested that the media can play a vital role in symbolizing a nation in order to create it. However, most Chinese do not know about Meng Wanzhou; thus, search engines and their online encyclopedic articles mediated Meng and Huawei as a symbol of China, which establishes them as proof that China is becoming better and using this incident as a case where Western countries are unreasonable in their view of China. When Chinese search engines and their online encyclopedias construct a sense of social reality where China and Huawei are treated unfairly, it inspires people's nationalism.

Overall, in terms of the Chinese internet, digital media are ready to facilitate a media logic that is approving of the Chinese government, "which is a traditional mass-media logic" (Schneider 2018, 446). This article concludes that although China's propaganda model was altered to a two-tiered system with features of centralizing and decentralizing, Chinese search engines and their allied services are still designed to facilitate and maintain the Chinese government's point of view under a Chinese political and social background. This interaction between technology and politics promotes nationalism not only in China but also elsewhere (Schneider 2018). As Anderson (1983) states, the media plays a vital role in creating a nation. When applied to the case of China, the Chinese government adjusts the Chinese search engines according to its own interests, ensuring that nationalism is also incorporated into digital media (Schneider 2018).

Research Limitations

The features of the dynamic nature of searches represent the main challenges for doing research on search engines (Jiang 2014). It is difficult to generalize all the issues related to China's search engine issues. Firstly, this study's sample is non-random, as this article selected only the Meng Wanzhou Incident as the research case since it is related to China's politics and sensitivity in China. Hence, it has the possibility to increase biased search patterns. Secondly, the feature of the search results is dynamic because of the enormous size of the web; moreover, search results also vary at different times, which may decrease the rate of reliability and validity. Hence, in future researches, search engine researchers could opt for more than one case study to analyze.

Meanwhile, it is suggested that future research select a period of time as a node to continuously search for results, and then proceed to the analysis.

Conclusion

Search engines are the information gatekeepers and should be objective since they have a huge effect on society. Although a few scholars have proved that search engines' biased patterns exist, most scholars focus on a business model. However, relatively few articles discuss the inherent political qualities of search engines. Through analyzing China's search engines and online encyclopedias, this article determined that search engines and their allied services have a close relationship with nationalism.

Through analyzing Baidu's, Sogou's, 360 Search's, and Google's top thirty search results, as well as their online encyclopedias covering the Meng Wanzhou Incident, this article found that Chinese search engines provide information with a single point of view by offering biased sources, a definitive and emotive narrative on Meng's incident, and fewer opportunities for users to interact. Consequently, Chinese search engines construct a story that is unquestionable concerning the fact that China and Huawei are treated unfairly. Above all, this article suggests that search engines and their allied services could be purposely changed to serve political regimes, render social reality, and favor self-interests. As Schneider (2018) noted, search engines are designed to fit the CCP's interests.

In short, as far as the Meng Wanzhou Incident is concerned, Chinese search engines provide information that is positive to China by filtering information. Meanwhile, the search engines and their online encyclopedias offer a sort of "national" biased information, which reflects the Chinese official narratives. However, this does not mean all articles are one-sided. Unlike the traditional patriotic education in China, the web is providing a sort of emotion to trigger people's feelings about nationalism. As Anderson (1983) mentioned, imagined communities go well beyond face-to-face contact but share a sense of belonging and identity for people who have not even met before. China's search engines symbolize Huawei as part of its national pride, and the Meng Wanzhou Incident as a case of Western countries' opposition to China. Through symbolizing this issue as a national case, people experience a sort of shared belonging and identity, consequently triggering people's sense of deep-rooted humiliation and righteous anger.

In conclusion, this article posits that through the interaction between technology and politics, China's government is attempting to put nationalism with its interests in digital media. The development of digital media does not mean compulsory revolutionizing of traditional channels of propaganda; instead, digital media can also spread traditional media's values but utilize alternative methods to disperse propaganda as far as this case is concerned.

REFERENCES

Agarwal, Manish, and David K. Round. 2011. "The Emergence of Global Search Engine: Trends in History and Competition." *Competition Policy International* 7 (7): 115–32.

Anderson, Benedict. 1983. *Imagined Communities: Reflections of the Origin and Spread of Nationalism.* New York: Verso.

Jazeera, Al. 2018. "Anger in China over Arrest of Huawei's Meng Wanzhou in Canada." https://www.aljazeera.com/news/2018/12/anger-china-arrest-huawei-meng-wanzhou-canada-181207091704518.html.

Badouard, Romain, Clément Mabi, and Guillaume Sire. 2016. "Beyond 'Points of Control': Logics of Digital Governmentality." *Internet Policy Review* 5 (3): 1–11.

Bar-Ilan. 1999. "Search Engine Results over Time. A Case Study on Search Engine Stability." *Cybermetrics* 2/3: 1–16 http://www.cindoc.csic.es/cybermetrics/articles/v2ilp1.html.

Bawden, David, and Lyn Robinson. 2009. "The Dark Side of Information: Overload, Anxiety and Other Paradoxes and Pathologies." *Journal of Information Science* 35 (2): 180–91. https://doi.org/10.1177/0165551508095781.

Benkler, Yochai. 2006. *The Wealth of Networks: How Social Production Transforms Markets and Freedom.* New Haven, CT: Yale University Press.

Billig, Michael. 1995. *Banal Nationalism.* Thousand Oaks, CA: SAGE.

Brin, Sergey, and Lawrence Page. 1998. "The Anatomy of a Large-Scale Hypertextual Web Search Engine." *Computer Networks and ISDN Systems* 30 (1–7): 107–17. http://infolab.stanford.edu/~backrub/google.html.

Chadwick, Andrew 2013. *The Hybrid Media System: Politics and Power.* Oxford: Oxford University Press.

China Internet Network Information Center (CNNIC). 2011. "Chinese Search Engine Market Research Report." http://h.cnnicresearch.cn/Download/Report/Rid/34.

———. 2016. "Statistical Report on Internet Development in China." https://cnnic.com.cn/idr/reportdownloads/201604/P020160419390562421055.pdf.

———. 2018. "Statistical Report on Internet Development in China. China Internet." *Network and Information Centre Online.* https://cnnic.com.cn/IDR/ReportDownloads/201911/P020191112539794960687.pdf.

Cho, Junghoo, Sourashis Roy, and Robert E. Adams. 2005. "Page Quality: In Search of an Unbiased Web Ranking." *Proceedings of the 2005 ACM SIGMOD: International Conference on Management of Data,* 551–62. Baltimore, MD.

Comscore. 2007. "Holiday Fever Drives Traffic to Shopping Sites in December." http://www.comscore.com/Press/Release.Asp?Id=1177.

Courtois, Cédric, Laura Slechten, and Lennert Coenen. 2018. "Challenging Google Search Filter Bubbles in Social and Political Information: Disconforming Evidence from A Digital Methods Case Study." *Telematics and Informatics* 35 (7): 2006–15. https://doi.org/10.1016/j.tele.2018.07.004.

Denning, Peter, Jim Horning, David Parnas, and Lauren Weinstein. 2005. "Wikipedia Risks." *Communications of the ACM* 48 (12). https://doi.org/10.1145/1101779.1101804.

Drummond, David. 2010. "A New Approach to China: An Update." https://googleblog.blogspot.nl/2010/03/new-approach-to-china-update.html.

Edelman, Benjamin. 2011. "Bias in Search Results?: Diagnosis and Response." *Indian Journal of Law and Technology* 7 (2): 16–32.

Esarey, Ashley, and Xiao Qiang. 2008. "Political Expression in the Chinese Blogosphere: Below the Radar." *Asian Survey* 48 (5): 752–72. https://doi.org/10.1525/AS.2008.48.5.752.

Faris, Ronald, and Nart Villeneuve. 2008. "Measuring Global Internet Filtering." In *Access Denied: The Practice and Policy of Global Internet Filtering,* edited by O. Deibert, J. Palfrey, R. Rohozinski, and J. Zittrain, 5–27. Cambridge, MA: MIT Press.

Friend, John M., and Bradley A. Thayer. 2017. "The Rise of Han-Centrism and What It Means for International Politics." *Studies in Ethnicity and Nationalism* 17 (1): 91–114. https://doi.org/10.1111/sena.12223.

Fuchs, Chrisrian. 2010. "Labor in Informational Capitalism and on the Internet." *Information Society* 26 (3): 179–96. https://doi.org/10.1080/01972241003712215.

Fullerton, Lindsay, and James Ettema. 2014. "Ways of Worldmaking in Wikipedia: Reality, Legitimacy and Collaborative Knowledge Making." *Media, Culture and Society* 36 (2): 183–99. https://doi.org/10.1177/0163443713515739.

Giddens, Anthony. 1985. *The Nation-State and Violence.* Cambridge: Polity Press.

Gillespie, Tarleton. 2017. "Algorithmically Recognizable: Santorum's Google Problem, and Google's Santorum Problem." *Information, Communication and Society* 20 (1)*: 63–80. https://doi.org/10.1080/1369118X.2016.1199721.

Global Times. 2018. "With Executive's Arrest, US Wants to Stifle Huawei." *Global Times,* December 6, 2018. http://www.globaltimes.cn/content/1130636.shtml.

Goldman E. 2008. "Search Engine Bias and the Demise of Search Engine Utopianism." In *Web Search. Information Science and Knowledge Management*, vol 14, edited by A. Spink and M. Zimmer. Berlin: Springer.

Granka, Laura A. 2010. "The Politics of Search: A Decade Retrospective." *Information Society* 26 (5): 364–74. https://doi.org/10.1080/01972243.2010.511560.

Gries, Peter, Derek Steiger, and Tao Wang. 2016. "Social Media, Nationalist Protests, and China's Japan Policy: The Diaoyu Islands Controversy, 2012–13." In *Social, Media: The Internet, and a Changing China,* edited by J. Delisle, A. Goldstein, and G. Yang, 161–79. Philadelphia, PA: University of Pennsylvania Press.

Grimmelmann, James. 2010. "Some Skepticism about Search Neutrality." In *The Next Digital Decade: Essays on the Future of the Internet*, edited by B. Szoka and A. Marcus*, 435–59. Washington, DC: Techfreedom.

Halavais, Alexander. 2008. *Search Engine Society.* Cambridge: Polity Press.

Halavais, Alexander, and Derek Lackaff. 2008. "An Analysis of Topical Coverage of Wikipedia." *Journal of Computer-Mediated Communication* 13 (2): 429–40. https://doi.org/10.1111/j.1083-6101.2008.00403.x.

Hellsten, Iina, Loet Leydesdorff, and Paul Wouters. 2006. "Multiple Presents: How Search Engines Rewrite the Past." *New Media and Society* 8 (6): 901–24. https://doi.org/10.1177/1461444806069648.

Herold, David K., and Peter Marolt. 2011. *Online Society in China: Creating, Celebrating, and Instrumentalising the Online Carnival.* London: Routledge.

Imre, Anikó. 2009. "National Intimacy and Post-Socialist Networking." *European Journal of Cultural Studies* 12 (2)*: 219–33. https://doi.org/10.1177/1367549409102428.

Introna, Lucas D., and Helen Nissenbaum. 2006. "Shaping the Web: Why the Politics of Search Engines Matters." *Information Society* 16 (3): 169–85.

Jiang, Min. 2014. "The Business and Politics of Search Engines: A Comparative Study of Baidu and Google's Search Results of Internet Events in China." *New Media and Society* 16 (2): 212–33. https://doi.org/10.1177/1461444813481196.

Jiang, Min, and Kristen Okamoto. 2014. "National Identity, Ideological Apparatus, or Panopticon? A Case Study of the Chinese National Search Engine Jike." *Policy and Internet* 6 (1)*: 89–107. https://doi.org/10.1002/1944-2866.POI353.

Johnston, Alastair I. 2017. "Is Chinese Nationalism Rising? Evidence from Beijing." *International Security* 41 (3): 7–43. https://doi.org/10.1162/ISEC_a_00265.

Kammerer, Yvonne, and Peter Gerjets. 2014. "The Role of Search Result Position and Source Trustworthiness in the Selection of Web Search Results When Using a List or a Grid Interface." *International Journal of Human–Computer Interaction* 30 (3)*:* 177–91. https://doi.org/10.1080/10447318.2013.846790.

König, René, and Miriam Rasch. 2014. *Society of the Query Reader: Reflections on Web Search*. Amsterdam*:* Institute of Network Cultures.

Leibold, James 2010. "More than a Category: Han Supremacism on the Chinese Internet." *China Quarterly* 1 (203): 539–59. https://doi.org/10.1017/S0305741010000585.

Levy, Steven. 2011. *In The Plex: How Google Thinks, Works, and Shapes Our Lives.* New York: Simon and Schuster.

Lih, Andrew. 2004. "Wikipedia as Participatory Journalism: Reliable Sources? Metrics for Evaluating Collab- Orative Media as a News Resource." *The 5th International Symposium on Online Journalism.* Austin, TX: University of Texas.

Liu, Jun. 2014. "Mobile Communication and Relational Mobilization in China." *Asiascape: Digital Asia* 1 (1–2): 14–38. https://doi.org/10.1163/22142312-12340003.

Liu, Zihui, Feng Zhang, and Shuo Chen. 2010. "基于用户体验的谷歌和百度搜索有效性比较研究" [Comparative Study on Search Effectiveness of Google and Baidu Based on User Experience]. *Journal of Zhejiang University* 37 (5): 605–10.

Mager, Astrid. 2012. "Algorithmic Ideology." *Information, Communication and Society* 15 (5): 769–87. https://doi.org/10.1080/1369118X.2012.676056.

———. 2017. "Search Engine Imaginary: Visions and Values in the Co-Production of Search Technology and Europe." *Social Studies of Science* 47 (2): 240–62. https://doi.org/10.1177/0306312716671433.

———. 2018. "Internet Governance as Joint Effort: (Re)Ordering Search Engines at the Intersection of Global and Local Cultures." *New Media and Society* 20 (10): 3657–77. https://doi.org/10.1177/1461444818757204.

Modongal, Shameer. 2016. "Development of Nationalism in China." *Cogent Social Sciences* 2 (1): 1–7. https://doi.org/10.1080/23311886.2016.1235749.

Morozov, Evgeny. 2011. *The Net Delusion: The Dark Side of Internet Freedom.* Philadelphia, PA: Public Affairs.

Mowshowitz, Abbe, and Akira Kawaguchi. 2002. "Assessing Bias in Search Engines." *Information Processing and Management* 38 (1): 141–56. https://doi.org/10.1016/S0306-4573(01)00020-6.

Musiani, Francesca. 2013. "Dangerous Liaisons? Governments, Companies and Internet Governance." *Internet Policy Review* 2 (1): 1–7.

Oboler, Andre, Gerald Steinberg, and Raphael Stern. 2010. "The Framing of Political Ngos in Wikipedia Through Criticism Elimination." *Journal of Information Technology and Politics*, 7, no. 4: 284–99. https://doi.org/10.1080/19331680903577822

Pan, Bing, Helene Hembrooke, Thorsten Joachims, Lori Lorigo, Geri Gay, and Luara Granka. 2007. "In Google We Trust: Users' Decisions on Rank, Position, and Relevance." *Journal of Computer-Mediated Communication* 12 (3): 801–23. https://doi.org/10.1111/j.1083-6101.2007.00351.x.

Pariser, Eli. 2011. *The Filter Bubble: What the Internet Is Hiding from You.* London: Penguin.

Pasquinelli, Matteo. 2009. "Google's Pagerank Algorithm: A Diagram of Cognitive Capitalism and the Rentier of the Common Intellect." In *Deep Search, the Politics of Search Beyond Google,* edited by K. Becker and F. Stalder*,* 152–62. Wien: Studien Verlag.

Pentzold, Christian. 2009. "Fixing the Floating Gap: The Online Encyclopaedia Wikipedia as A Global Memory Place." *Memory Studies* 2 (2)*:* 255–72. https://doi.org/10.1177/1750698008102055.

People.cn. 2018. "加拿大粗暴对待孟晚舟严重侵犯人权" [Canada's Rude Treatment of Meng Zhouzhou's Serious Violation of Human Rights]. *People.cn*, December 9, 2018. http://world.people.com.cn/n1/2018/1209/c1002-30451802.html.

Perritt, Henry H. 1998. "The Internet as A Threat to Sovereignty?: Thoughts on the Internet's Role in Strengthening National and Global Governance." *Indiana Journal of Global Legal Studies* 5 (2): 423–42.

Poster, Mark. 1999. "National Identities and Communications Technologies." *Information Society* 15 (4)*: 235–40. https://doi.org/10.1080/019722499128394.

Qiu, Jack L. 1999/2000. "Virtual Censorship in China: Keeping the Gate between the Cyberspaces." *International Journal of Communications Law and Policy* Issue 4: 1–25. https://pdfs.semanticscholar.org/c10b/45861c489bcbbe69dc6d75e1e3ce599f07a1.pdf.

Reilly, James. 2012. *Strong Society, Smart State: The Rise of Public Opinion in China's Japan Policy.* New York: Columbia University Press.

Ren, Fuji, and Chao Li. 2016. "Hybrid Chinese Text Classification Approach Using General Knowledge from Baidu Baike." *IEEJ Transactions on Electrical and Electronic Engineering* 11 (4): 488–98. https://doi.org/10.1002/tee.22266.

Rieder, Bernhard. 2009. "Democratizing Search? From Critique to Society - Oriented Design." In *Deep Search, the Politics of Search beyond Google,* edited by K. Becker and F. Stalder, 133–51. Wien: StudienVerlag.

Royal, Cindy, and Deepina Kapila. 2009. "What's on Wikipedia, and What's Not. . .? Assessing Completeness of Information." *Social Science Computer Review* 27 (1): 138–48. https://doi.org/10.1177/0894439308321890.

Schneider, Florian. 2018. "Mediated Massacre: Digital Nationalism and History Discourse on China's Web." *Journal of Asian Studies* 77 (2)*: 429–52. https://doi.org/10.1017/S0021911817001346.

Seymour, Tom, Dean Frantsvog, and Satheesh Kumar. 2011. "History of Search Engines." *International Journal of Management and Information Systems* 15 (4): 47–58. https://doi.org/10.19030/ijmis.v15i4.5799.

Shen, Simon, and Shaun Breslin. 2010. *Online Chinese Nationalism and China's Bilateral Relations.* Lanham, MD: Lexington Books.

Shirky, Clay. 2015*. Smartphones, Xiaomi, and the Chinese Dream*. *Rice: Little.* New York: Columbia Global Reports.

Smith, Anthony D. 1991. *National Identity.* London: Penguin.

Spink, Amanda, Bernard J. Jansen, Chris Blakely, and Sherry Koshman. 2006. "A Study of Results Overlap and Uniqueness among Major Web Search Engines." *Information Processing and Management* 42 (5): 1379–91. https://doi.org/10.1016/j.ipm.2005.11.001.

Spink, Amanda, and Michael Zimmer. 2008. *Web Search: Multidisciplinary Perspectives.* Berlin: Springer.

Statcounter. 2018. "Desktop Search Engine Market Share China: Jan–Dec 2018." http://gs.statcounter.com/search-engine-market-share/desktop/china/#monthly-201801-201812-bar.

Steiber, Annika, and Sverker Alänge. 2013. "The Formation and Growth of Google: A Firm-Level Triple Helix Perspective." *Social Science Information* 52 (4): 575–604. https://doi.org/10.1177/0539018413497833.

Stickmann, Daniela. 2013. *Media Commercialization and Authoritarian Rule in China.* Cambridge: Cambridge University Press.

Tan, D., M. Lin, and S. Ye. 2005. "中文 google 和百度的排序方式与检索效率比较分析." [Comparative Analysis of Chinese Google and Baidu's Results Ranking and Retrieval Efficiency] Journal of Modern Information] 1 (3): 87–9.

Taylor, Greg. 2013. "Search Quality and Revenue Cannibalisation by Competing Search Engines." *Journal of Economics and Management Strategy* 22 (3): 445–67. https://doi.org/10.1111/jems.12027.

Tecent. 2018. "How Does the National Enterprise Huawei Counter the Us Sanctions?" https://new.qq.com/omn/20180427/20180427a1lsk2.html.

Tong, Jingrong, and Landong Zuo. 2014. "Weibo Communication and Government Legitimacy in China: A Computer-Assisted Analysis of Weibo Messages on Two 'Mass Incidents'." *Information, Communication and Society* 17 (1): 66–85. https://doi.org/10.1080/1369118X.2013.839730.

Van Couvering, Elizabeth. 2007. "Is Relevance Relevant? Market, Science, and War: Discourses of Search Engine Quality." *Journal of Computer-Mediated Communication* 12 (3): 866–87. https://doi.org/10.1111/j.1083-6101.2007.00354.x.

Van Hoboken, Joris. 2009. "Search Engine Law and Freedom of Expression." In *Deep Search, the Politics of Search beyond Google* edited by K. Becker and F. Stalder, 85–97. Wien: StudienVerlag.

Vaughan, Liwen. 2004. "New Measurements for Search Engine Evaluation Proposed and Tested." *Information Processing and Management* 40 (4): 677–91. https://doi.org/10.1016/S0306-4573(03)00043-8.

Villeneuve, Nart. 2008. "Search Monitor Project: Toward a Measure of Transparency." https://citizenlab.ca/wp-content/uploads/2011/08/nartv-searchmonitor.pdf.

VOA News. 2019. "Who Is Meng Wanzhou?" *VOA,* January 28, 2019. https://www.voanews.com/a/who-is-meng-wanzhou/4762532.html.

Wales, Jimmy. 2008. "The Wisdom of Crowds." https://www.theguardian.com/commentisfree/2008/jun/22/wikipedia.internet.

Wang, Yiming, and Fei Liu. 2007. 中文搜索引擎的搜索结果重合率研究 [Chinese Search Engine Results Overlap Research Report]. Beijing: Information Management Department, Chinese Search Behavior Research Laboratory. Peking, China: Peking University Press.

Wu, Xu. 2007. *Chinese Cyber Nationalism: Evolution, Characteristics, and Implications: Evolution, Characteristics, and Implications*. Lanham, MD: Lexington Books.

Yang, Guobin. 2009. *The Power of the Internet in China: Citizen Activism Online.* New York: Columbia University Press.

Yang, Lijun, and Yongnian Zheng. 2012. "Fen Qings (Angry Youth) in Contemporary China." *Journal of Contemporary China* 21 (76): 637–53. https://doi.org/10.1080/10670564.2012.666834.

Zhao, Dingxin. 2002. "An Angle on Nationalism in China Today: Attitudes Among Beijing Students After Belgrade 1999." *The China Quarterly* 1 (172): 885–905. https://doi.org/10.1017/S0009443902000542.

Zheng, Yongnian. 2008. *Technological Empowerment: The Internet, State, and Society in China.* Stanford, CA: Stanford University Press.

ABOUT THE AUTHOR

DeChun Zhang: Master's Student, Erasmus Mundus Joint Program "Journalism, Media and Globalization," Aarhus University, Denmark; and University of Amsterdam, Amsterdam, The Netherlands

The Journal of Communication and Media Studies
offers an interdisciplinary forum for the discussion of
the role of the media and communications in
society. The journal explores everyday experiences
of media cultures, the forms and effects of
technologies of media and communications, and
the dynamics of media business. It also addresses
media literacies, including capacities to "read" and
"use" the media, and the role of media as a key
component in formal and informal learning.
Contributions to the journal range from broad,
theoretical conceptualizations of media, to detailed
empirical examinations and case studies of media
practices.

The Journal of Communication and Media Studies
is a peer-reviewed, scholarly journal.