Information Diets in an Information Desert: Selective Exposure in a Restricted Information Environment

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Abstract

We study the phenomenon of selective exposure in China’s restricted information environment, contributing to the extant literature on selective exposure in authoritarian regimes. Through an experimental survey study, we measure to what extent features of online news, such as the popularity (i.e. number of “Likes”), influence information selection among Chinese internet users (“netizens”). We find evidence of ideological preferences for news information varying by news topic. For news information concerning domestic affairs, Chinese netizens prefer articles that take the opposite position of the government. However, for foreign affairs they prefer articles that align with the government’s position. We also find social endorsements to be highly influential on news selection behaviour. Popular posts with many ”likes” attract online readers in China to the point where they select content they may not otherwise read, even though consumers know the internet environment is easily manipulated.

Keywords: selective exposure, news

Conflicts of Interest: none
Selective exposure—the phenomenon where citizens opt to consume information consistent with their ideological preferences—is largely studied within multiparty systems where citizens often have unrestricted access to a wide range of ideological information (e.g. Iyengar and Hahn, 2009; Stroud, 2010; Skovsgaard, Shehata, and Strömbäck, 2016). In authoritarian states, citizens generally face restrictions on information access, such as limited access to biased information, or find that their actions and information consumption are monitored by the state (Rød and Weidmann, 2015; Kalathil and Boas, 2010; Morozov, 2011; MacKinnon, 2013). Under these circumstances, rather than attempting to access censored information that may be unfavorable to the government, citizens of authoritarian states typically consume the information readily available to them (Stockmann, 2013; Chen and Yang, 2019; Roberts, 2018). However, scholars have found that even in these restricted information environments, there is evidence of information preferences and selective exposure behavior (e.g. Huang and Yeh, 2019; Robertson, 2015).

We contribute to the extant literature by examining news selection behavior in authoritarian regimes based off ideological framing of domestic and foreign affairs. We also consider how modern news consumption through social media affects selective exposure in authoritarian regimes. Following Messing and Westwood (2014), we test if social endorsement cues (“Likes”) move citizens to consume content they may not otherwise select, such as overt propaganda.

We focus our study on China—a country notorious for its information control practices. The government restricts its citizens from accessing prominent foreign websites and news publications, such as Google and the New York Times, and it has instituted increasingly restrictive policies (e.g. Wong, 2017; China has turned Xinjiang into a police state like no other, 2018). We use an experimental survey study to assess what factors Chinese netizens consider most when selecting news information, given China’s unique and restrictive information environment. Using a national web sample in China (drawn to match demographics for China’s internet users) we show that there is a desire for diverse news content among
typical Chinese internet users. We also show that articles with high levels of popularity are more likely to be selected. Similar to the American context, social cues drive Chinese internet users to consume "popular" information, which may serve as a more subtle means of information control and influence. Some publications have already taken advantage of this phenomenon. The Chinese state news publication, *China Daily*, has updated its mobile app to award points to users for reading, sharing and *liking* articles, and these points can be used to make purchases from an online store (Cook, 2019).

## 1 Selective Exposure and Consumption of News

Unconstrained by central media control, citizens of countries with open information environments regularly opt to consume content from sources that align with their political beliefs (Dilliplane, Goldman, and Mutz, 2013; Stroud, 2008; Goldman and Mutz, 2011; Silvia and Jingbo, 2011). Many partisans also avoid information sources they perceive as counter to their beliefs (Baum and Gussin, 2008; Kevin et al., 2008; Iyengar and Hahn, 2009). However, there is evidence that individuals sometimes seek out attitude-discrepant information when they expect it to be useful (Frey, 1981; Valentino et al., 2009). Studies have also found other factors can be more important to content selection than the perceived political ideology of the source. Even for partisans, topic relevance (e.g. Mummolo, 2016) and social influence (e.g. Messing and Westwood, 2014) are both sufficient to attenuate partisan selective exposure.

Scholars have also considered how selective exposure behavior may vary in restricted information environments. While this area remains under-explored, some initial research demonstrates that there are similarities in how citizens choose what information to consume with information controls in place. Geddes and Zaller (1989) theorize that citizens of both democratic and authoritarian regimes process information in similar ways, and the only difference is that the two populations have varying levels of access to information from which a choice can be made. Robertson (2015) shows that similar to Americans, citizens of authoritarian regimes may exhibit the same selective exposure behavior based on their political beliefs or biases, even if there are limited opportunities to express such preferences.
Robertson finds that in Russia, citizens opposed to the government are more likely to seek out information about election monitoring relative to regime supporters.

However, few modern-day authoritarian regimes can exert complete control over the media, and some find it beneficial to avoid enacting harsh restrictions. Thus, even restricted information environments have a greater diversity of information than often assumed (e.g. Egorov, Guriev, and Sonin, 2009; Liebman, 2011; Lorentzen, 2014). In China, Jaros and Pan (2018) found that central authorities cannot exercise full control over the Chinese media, as competing motives at different levels of government can cause the coverage and content of national party publications to differ from that of provincial publications. Additionally, King, Pan, and Roberts (2013) found that the Chinese government chooses not to apply broad censorship of all online government criticism, and sometimes censors do not fully comply with given directives. Authorities also avoid overt acts of censorship as they can sometimes backfire (Hobbs and Roberts, 2018; Jansen and Martin, 2003). Additionally, some netizens circumvent Internet controls by using virtual private networks (VPNs). In China, it is estimated that approximately 31% of Internet users have used a VPN (Marvin, 2018).

Studies on information consumption behavior in China demonstrate that Chinese consumers have preferences that constrain the type of content they choose to consume. Before the internet became a primary source of news information, Stockmann (2010) found that Chinese citizens are likely to select commercialized, non-state news sources when the political stance of state newspapers diverged from public opinion. A more recent study has shown that individuals’ perceptions of the Chinese government and the West also influences consumers’ news preferences. Chinese citizens with a low opinion of the Chinese government or a higher opinion of the West tend to prefer news articles with a positive frame of foreign countries or a negative frame about China (Huang and Yeh, 2019).

While this literature offers some insight into selective exposure behavior in China’s restricted information environment, there has been little research about how this behavior may
differ when news selection is conducted online—the current, most popular method of accessing news information. In China, over 80% of internet users access online news sites (, CNNIC). In order to attract these Internet users, media organizations such as Xinhua (xinhua 新华) use social media sites such as WeChat (weixin 微信), which boasts around 500m individual users in China (Yang, 2018), to attract readers their articles (Xin, 2018). Accessing news through the internet and social media introduces other factors that likely influence news selection behavior, such as promoted or featured content, social interactions and endorsements—and in many authoritarian regimes—online government surveillance. Additionally, in the case of countries like Russia and China, authorities also attempt to guide public opinion by employing individuals to generate online posts that support the government, spin news in the government’s favor, or distract citizens from undesirable information (Shuster and Ifraimova, 2018; King, Pan, and Roberts, 2017).

2 Methods

We fielded our survey from March 21-30, 2017, on the Cint panel, to recruit 1,499 participants.\footnote{Participants were required to provide consent and be 18 years of age or older.} Participants were representative of the Chinese internet population in terms of sex, but skewed older, urban, and more educated.\footnote{We used data from CNNIC’s January 2017 Statistical Report on Internet Development to determine how representative the sample was compared to the general Chinese internet population.} We instituted a number of measures to ensure valid responses.\footnote{Approximately 30% of individuals passed our quality control measures.}

We use a conjoint experiment design to determine what factors Chinese netizens consider most when selecting news information. We created two sets of six headlines, with each set of headlines varying across four attributes: (1) news topic, (2) congruence with the Chinese government’s issue alignment, (3) news source, and (4) number of social endorsements. The news topics used in this study were categorized as either ”hard” or ”soft” news. For congruence, we operationalize a negative frame of China as incongruent with the Chinese Communist Party’s (CCP) issue alignment, while a positive frame is congruent. We selected
four news sources to use in our experiment – *the People’s Daily* (*renmin ribao* 人民日报) (50+ million followers, 70k+ posts in 2017), *Southern Metropolis Daily* (*nanfang dushi bao* 南方都市报) (11+ million followers, 4k+ posts in 2017), *BBC* (160k+ followers, 14k+ posts in 2017), and the *Wall Street Journal* (18+ million followers, 109k+ posts in 2017). To determine the range of values for social endorsements that signaled a post was ”popular” or ”less popular,” we collected social endorsement data from Sina Weibo (*weibo* 微博) between November 24, 2016 - January 21, 2017. The lower range (90 to 191) fell below the median and signaled a comparatively ”unpopular” post, while the higher range (3171 to 9544) fell above the median and signaled a more ”popular” post.

Participants completed ten selection tasks where they were asked to pick which of two articles they would be more likely to read. See Figure 1 for an example. They then answered a series of questions about themselves, including demographic questions.

![Figure 1: An example of the selection task respondents were asked to complete. The article on the left is attributed to the Wall Street Journal as its source, and the headline states ”Group of ‘Restless Seniors’ Bike from Hangzhou to Beijing”. The article on the right is attributed to the BBC, and the headline states ”American Senators Meet with President of Taiwan, Tsai Ing-wen, Disrespecting Diplomatic Protocol”.](image)

3 Results

We find that news source has little influence on the news selection behavior of Chinese netizens. As shown in Figure 3A, respondents in our study were generally ambivalent about

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4 We used a VPN to access Weibo from a Chinese server, and we counted the number of ”Likes” Weibo posts from news outlets received, recording 384 observations total. We recorded the number of ”Likes” for posts that had just been shared, and thus, had few views and few ”Likes.” We also counted ”Likes” for ”Hot” or trending posts from news outlets, which had hundreds of thousands of ”Likes.” As a result, the distribution of this data was zero-skewed with two extremes.
whether the information came from a state-run source (0.51, 95% confidence interval [0.49, 0.52]), a commercial Chinese source (0.50, 95% confidence interval [0.49, 0.52]), or a foreign source (0.50, 95% confidence interval [0.49, 0.50]) news source. Notably, these findings differ from Stockmann (2010)’s hypothesis that news source and trust in news sources dramatically influences news selection behavior in China.

The content of a news article, however, has substantial effects on whether Chinese Internet users choose to read it. Chinese netizens tend to prefer "hard" news stories, such as articles related to politics and current affairs, over "soft" news stories (0.44, 95% confidence interval [0.43, 0.45]). However, their interest in "hard" news stories is influenced by whether the story concerns foreign or domestic affairs, and whether the story is congruent with the Chinese government position (see Figure 3B). The probability a Chinese netizen selects a foreign story with an incongruent position (0.50, 95% confidence interval [0.49, 0.52]) is approximately equal to the probability that they select a domestic story with a congruent position (0.50, 95% confidence interval [0.49, 0.52]), suggesting that they are ambivalent between these two types of articles. However, foreign stories with congruent positions and domestic stories with incongruent positions are far more appealing. Participants in our study had a greater than 50% likelihood of selecting a foreign story with a congruent position (0.54, 95% confidence interval [0.53, 0.55]), and they had an even greater probability of selecting a domestic story with an incongruent position (0.58, 95% confidence interval [0.56, 0.59]). This result suggests that the influence of the news topic on selection behavior depends substantially on whether the article’s position aligns with that of the the Chinese government as well.

Finally, we find that the popularity of an article (i.e., the number of social endorsements it receives) has dramatic effects on news selection behavior (see Figure 3C). For "soft" news stories as well as "hard" news stories that are either congruent or incongruent with the Chinese government position, "popular" articles with more social endorsements are much more likely to be selected than "unpopular" ones. For "soft" news articles, a high number of social endorsements increases the selection probability by 0.12 (0.38 "unpopular", 95%
confidence interval [0.36, 0.39]; 0.50 ”popular”, 95% confidence interval [0.49, 0.52]). For "hard" news articles congruent with the Chinese government position, a high number of social endorsements increases the selection probability by 0.15 (0.45 ”unpopular”, 95% confidence interval [0.43, 0.46]; 0.60 ”popular”, 95% confidence interval [0.58, 0.61]), and for ”hard”, incongruent news articles the selection probability increases by 0.14 (0.47 ”unpopular”, 95% confidence interval [0.45, 0.48]; 0.61 ”popular”, 95% confidence interval [0.60, 0.63]). Thus, social endorsements can increase the likelihood that a Chinese netizen selects an article to a probability of 0.5 or higher.

4 Conclusion

Through our study, we find strong evidence that factors such as the content, ideological lean, and ”popularity” of online news articles shared on Chinese social media influence whether Chinese netizens choose an article. Similar to the US context, social endorsements substantially increase the likelihood that a consumer will choose to read an article, even
when it has an ideological lean in opposition to that of the Chinese government. These results indicate that social endorsements can easily direct Internet traffic to specific online content, even if it is not content that a netizen would generally consume.

Additionally, our results suggest that if Chinese netizens were provided with broader access to news content, they would likely continue to select news that aligns with the government’s position when it comes to foreign affairs, but they are more likely to choose information incongruent with the government’s position when it comes to domestic affairs. Thus, simply exposing Chinese Internet users to a wider variety of content is unlikely to result in large consumption of articles that frame Taiwanese independence or American military exercises in Asia in a positive light. Our study does not address whether it is knowledge of government surveillance, nationalism, or other factors that drive this behavior, but it exposes a new facet of Chinese netizens’ information consumption preferences.

However, our research and study design face certain limitations. We could only use a select number of foreign and domestic news sources in our experiment, and we also had a limited number of topics, both domestic and foreign, that we used in our study. Thus, we generalize our results from a sample of possible sources and topics. Additionally, our study sought to simulate the experience of selecting news on social media websites, but we were not able to provide a completely realistic experience in our survey study. Since our survey was fielded in March 2017, many social media sites have sought to avoid government scrutiny by emphasizing entertainment content on their platforms, as opposed to news information. Also, China has now implemented and enforced new policies for conducting survey research in Mainland China. Researchers must now receive the approval of officials before conducting surveys, and politically-related surveys are highly discouraged. This survey may have been one of the last studies conducted before the full implementation of these policies.

The implications of our strongest finding about the effects of social endorsements on news selection behavior are significant. The online environment is easily manipulated, particularly in China, where individuals are sometimes paid by the government and other organizations to
guide consumers towards specific information that aligns with a desired ideological position (e.g. Conger, 2019). Thus, the fact that social endorsements have such a substantial effect on selective exposure behavior suggests that artificially inflating the popularity of online content can drastically change the amount of attention it receives—which could potentially influence netizens’ opinions.
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