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Internet Censorship in China: Examining User Awareness and Attitudes

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Internet censorship has been a popular topic both in academia and in the popular press. A fundamental question that has not been fully addressed is how censorship is perceived by people who experience it. A person may exhibit pro- or anti-censorship attitudes, but it is possible that (s)he may not even be aware of its existence. In this study, we report results of a large-scale survey on Chinese Internet users' experiences with Internet censorship. The results show that users' demographic backgrounds, Internet usage experience, and personality influence their attitudes toward censorship. Those who score high on authoritarian personality measures tend to support censorship. Attitudes toward censorship change so that over time it is viewed as more normal, which suggests a "normalization" process. We discuss how these findings can generalize beyond the Chinese context to other societies in which Internet censorship can exist.

Categories and Subject Descriptors: H.5.m [**Information Interfaces and Presentation**]: Miscellaneous

General Terms: Human Factors

Additional Key Words and Phrases: Internet censorship, awareness and attitude, China, authoritarian personality, networked authoritarianism, normalization

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1. INTRODUCTION

Internet censorship has attracted research attention for some time. In the 1980s, before the Internet was widely commercialized, instituting censorship was discussed for a college campus network [Foley 1989]. More recently, studies have examined how Internet censorship discourages users' practices of contributing online content [Lindtner et al. 2008; Shklovski and Kotamraju 2011], the ways in which censorship impacts discussions on social media [Chen et al. 2013], and how it undermines the government's credibility [Richet 2013]. However, to date, little attention has focused on users' awareness of Internet censorship and their attitudes toward it. This is important, as users' perceptions have been shown to impact their Internet experience, their level of trust in online content, and their online behaviors [Guo and Feng 2012; Shklovski and Kotamrju 2011; Wang and Mark 2013]. Understanding user attitudes toward censorship has implications for both Internet policy makers and information technology designers because Internet censorship, as a major Internet regulation mechanism, is being increasingly deployed in some countries. Thus, understanding users' attitudes can apply in a global context, as the impacts of censorship practices expand [Verhulst 2006].

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The broad concept of Internet censorship consists of three main mechanisms: policy mechanisms, social norm mechanisms, and technical censoring mechanisms [Roberts et al. 2009]. At the policy level, governments often construct media policies and legislative frameworks to control information on the Internet. Social norms can also act as a mechanism of control, as the social pressure to not view forbidden information can be an effective form of regulation. Technical censoring mechanisms on the Internet, such as IP blocking, content censoring, and keyword filtering, are techniques to restrict a user's capability of accessing, publishing, and exchanging information online [Roberts et al. 2009]. In this article, we focus only on the mechanism of technical censoring of Internet censorship.

Deibert and Rohozinski [2010] further divide the mechanism of technical Internet censorship into three generations. The first generation of techniques focuses on automated filtering and surveillance. For example, Ng [2013] has observed that users cannot post things on Weibo (the Chinese version of Twitter) if they contain certain keywords. Second-generation techniques use informal requests from authorities to manually remove information. In the case of Weibo posts, even if sensitive posts get through the automatic censoring mechanism, they could still be manually deleted on the authorities' requests [Ng 2013]. The third-generation mechanism uses state-sponsored information campaigns to manipulate the online discourse. The government could employ hundreds of people as "commentators" to behave as normal users but only publishes pro-government comments on social media [Sullivan 2014]. We focus on first- and second-generation techniques of censorship in this article.

China is at the forefront of all these techniques. Research attention has focused on understanding how specific censorship techniques work. For example, Ng [2013] and his research team keep tracking a list of the sensitive keywords used by Weibo, and how users (mainly activists) interplay with these keywords. In addition to China, Russia and some former Soviet countries have moved beyond the first generation and are focusing on second- and third-generation techniques. Some democratically elected governments (e.g., South Korea and India) are also using second- and third-generation controls, all in the name of combating cyber-crime and cyber-warfare [Deibert and Rohozinski 2010]. Some researchers warn that this trend could expand to other democratic countries of Europe and North America. For example, Canada, Ireland, and Germany have already started to regulate behavior in cyberspace following their own national law [Deibert and Rohozinski 2010; Ng 2013]. Therefore, studying the user experience of censorship in certain regions could have broader implications for the experience of censorship across countries and across different forms of government.

Some research has focused on the influence of Internet censorship on certain individuals and groups, such as how it affects Chinese activists, and how they interacted with censorship to challenge the official discourse [Habermas 2006; Kalathil and Boas 2001; MacKinnon 2008; Taubman 1998]. However, more recently, some researchers began to notice that a large portion of Chinese Internet users may conform to government ideologies and are not interested in political matters; therefore, they do not use the Internet as Westerners presumed [Wallis 2011; Wu 2012, 2013]. These works have also studied users' different patterns of Internet usage in the context of Internet censorship, but the perception of censorship has so far not received much attention.

The few studies that have focused on users' perceptions of Internet censorship have often conflated the notion of censorship as "a tangible experience" with "an abstract regulation concept," which present contradictory results [Fallows 2008; Guo 2003, 2005, 2007]. The survey questions in these previous studies have been vague, such as "Do you agree that the Internet should be managed or controlled?" Based on the results to such questions, the authors then characterized users' attitudes toward Internet censorship [Guo 2003, 2005, 2007]. The distinction between a tangible experience and an

abstract concept is important, as one qualitative case study showed that Internet users perceive and react differently when presented with the abstract notion of censorship as opposed to actually experiencing censorship [Shklovski and Kotamraju 2011]. Without an accurate understanding of users' actual perceptions of their Internet censorship experience, results might be misleading for incorporating into policy making or system designs.

In addition, an assumption used in previous studies is that the majority, if not all, of Internet users who live in a country with Internet censorship (e.g., China) are aware of its existence. However, this premise has not been established. Further, contrary to the perspective of a Western audience, some people in such countries may even support Internet censorship as well as government ideologies consistent with censorship [Wu 2013]. This has been found in an experiment study with some Chinese university students [Guo and Feng 2012] and in a survey study with Chinese citizens (although these studies also conflate users' perceptions of the abstract concept of censorship with the actual experience) [Fallows 2008; Guo 2003, 2005, 2007]. Yet, also in China, quite a few studies have revealed that many individuals have used specific strategies to circumvent Internet censorship [Castells 2009; King et al. 2013; MacKinnon 2008, 2009; Roberts et al. 2009; Shklovski and Kotamraju 2011; Zhu et al. 2013; Ng 2013]. Such behaviors indicate that contrary to the aforementioned studies showing support of Internet censorship, some users exhibit anti-censorship orientations. We believe that the inconsistency between users' reported pro-censorship attitudes and their anti-censorship behaviors deserves further exploration.

There are a few researchers who attempted to explain this inconsistency. For example, MacKinnon [2011] described "networked authoritarianism," which suggests that in a networked authoritarian state (e.g., China and several former Soviet republics), the government controls a wide range of conversations about the country in both the traditional media and new media (e.g., the Internet). On the Internet, the government will follow a discourse and sometimes responds to citizens' calls for justice. As a result, citizens may feel that they have the ability to acquire all information and express what they want freely, which has traditionally been impossible in an authoritarian state. In addition, the government can use traditional media to propagandize the necessities of Internet control. MacKinnon believes that previous studies that claimed the leaders of those authoritarian states were digging their own graves by providing people with Internet, have blinded many Western policy makers, activists, and journalists to what is really happening in such countries, and thus deserves further exploration.

Our study differs from previous studies in that we focus on understanding the general Internet users' real-world experiences and attitudes toward Internet censorship, as opposed to investigating their perceptions about an abstract idea of Internet censorship. To study this, we conducted a large-scale survey study and asked about attitudes of censorship only to those users who reported being aware of the existence of Internet censorship. In order to shed light on Internet users' perceptions and experiences of censorship, we focus on China's Internet user population in this article because (a) China has a sophisticated Internet censorship mechanism [Lum 2006] and (b) a fairly large Internet user population (44.1% or 591 million) relative to other countries [CNNIC 2013].

2. RELATED WORK

Between 2000 and 2007, 80% of urban Chinese citizens (Internet users and non-users) agreed that there should be control over the Internet. In 2007, when asked "who should be responsible for controlling or managing the Internet?", almost 85% said that they supported government control over the Internet [Guo 2003, 2005, 2007]. This high acceptance rate of Internet regulation is used by the Chinese government

to justify its restrictive Internet policy and censorship practice [Xinhua.net 2009]. However, as discussed previously, support for the concept of controlling the Internet does not necessarily imply support for all kinds of censorship practices. For example, in the same 2007 survey mentioned earlier, 87% of respondents supported controlling pornographic information, but only 27% agreed that online chatting should be censored [Guo 2007].

A Pew analysis of the aforementioned survey suggested that urban Chinese citizens have some negative impressions of the Internet, which may lead them to support Internet censorship [Fallows 2008]. For example, only 30% of urban Internet users and 18% of urban non-users considered online content reliable, and over 93% of urban Internet users said they considered Internet content unsuitable for children. Another study, the Global Internet User Survey [GIUS 2012], revealed that 89% of China's Internet users agreed that some forms of regulation should exist on the Internet, and 98% of users said the Internet should be governed to protect the community from harm. The Pew report also points out that negative coverage of the Internet in the Chinese press reinforces such negative impressions in the public's mind, which is consistent with MacKinnon's idea of networked authoritarianism [MacKinnon 2011]. The Pew report explained the high level of support for government control of the Internet by citing the survey report of Guo [Fallows 2008, p. 5]: "It is natural for Chinese people to assume that the government, which is the only legitimate source of authority, should take the lead in regulating the Internet." This implies that Chinese users' views on Internet censorship may correlate with their attitudes toward authority. The Pew report also acknowledged some contradictions, such as "the heavy pronouncements and regulations by the government" and "large-scale disregard of these regulations by local enforcers and Internet users." Thus, the percentage of urban Chinese citizens who actually support Internet censorship remains an open question.

Chinese citizens may not be aware of censorship practices. Of Chinese Internet users, 89% believed that they had full access to all of the information on the Internet, which implies that they might not have noticed the existence of Internet censorship, or at least they may not believe that censorship has affected their usage of the Internet [GIUS 2012].

Users' attitudes toward censorship may also be influenced by their political and psychological factors. Guo and Feng [2012] examined the relationship between pro-censorship attitudes and several political and psychological factors, including the authoritarian personality (i.e., the tendency that people are more likely to obey and submit to authority [Adorno et al. 1950]), the third-person effect (i.e., the tendency for people to think others are more influenced by the media than they are [Davison 1983]) and the social and political context of a reformed China (e.g., such as single-child policy) [Guo and Feng 2012]. These researchers found that an authoritarian personality was not a consistent predictor for pro-censorship attitudes, nor was the third-person effect predictive. However, another study found that the authoritarian personality was a significant predictor of pro-censorship attitudes toward restricting gambling advertising on TV [Youn et al. 2000]. These contradictory empirical findings reflect the complexity of examining censorship together with political and psychological factors.

Demographic differences also are related to users' attitudes of censorship. Women were found to be more likely than men to support censoring pornography in films or magazines [Gunther 1995]. Ho and Lui [2003] found that women and older people showed a greater desire to restrict adult-oriented materials, but this was not related to their acceptance of pornographic content filtering. However, as both studies are not specific to the context of Internet censorship in China, it is unclear whether these findings would apply to a general system of Internet censorship.

In summary, previous studies on Chinese users' perceptions of Internet censorship have generated useful insights, but most of the studies were based on examining an abstract concept of censorship as opposed to actual user experience with censorship. The few studies that have focused on real-world experience are also limited because they either target a particular youth population or a particular censorship practice (e.g., commercials on gambling or pornographic content). To address these limitations, we used snowball sampling to acquire a broader Internet user sample population (as opposed to a single class of college students [Guo and Feng 2012] or citizens without Internet experience [Guo 2003, 2005, 2007]) to explore Chinese Internet users' attitudes toward their actual experiences of Internet censorship. We also explore reasons to explain their attitudes.

3. RESEARCH QUESTIONS AND HYPOTHESES

In this study, we propose both research questions and hypotheses. Because studies on awareness and attitudes of Internet censorship in China are few, we are unable to formulate predictions for these factors. We, therefore, first ask the following two general research questions.

3.1. Research Question 1

What proportion of Chinese Internet users are aware of Internet censorship? For those who are aware of censorship, in what circumstances do they encounter Internet censorship in their daily lives? Some Chinese Internet users may be aware that some social network websites censor content because it is written in the user agreements when they register for an account [Chen et al. 2013]. Other censorship is less explicit. Queried results of search engines are automatically filtered out when they contain sensitive keywords [Fu et al. 2013]. Blog posts of dissenters are quickly deleted by website administrators even if they can bypass the automated filters [Bamman et al. 2012]. However, studies have revealed an array of circumvention methods by users [King et al. 2013; MacKinnon 2008, 2009; Roberts et al. 2009; Shklovski and Kotamraju 2011]. For example, abbreviations, neologisms, homophones, and homographs have been used to avoid keyword-based automated censorship [King et al. 2013].

It is possible though that the majority of users infrequently encounter Internet censorship. We, therefore, ask how much awareness of censorship exists in the general Chinese Internet user population. This is an important premise to study, because if users are not aware of censorship, this can affect how they express their attitudes toward it. To our knowledge, no existing studies have looked at the degree to which Chinese users are aware of censorship.

3.2. Research Question 2

What are the attitudes of Chinese Internet users toward Internet censorship? Do they support, oppose, or are they indifferent toward censorship? For this research question, we focus on the attitudes of Internet users who report being aware of Internet censorship in China. Previous research suggests that the majority of Chinese Internet users support an Internet controlling policy [Fallows 2008; Guo 2003, 2005, 2007; Guo and Feng 2012]. However, the majority of users who are aware of Internet censorship might actually be against it because, for example, censorship could hinder Internet usage. No studies have yet disentangled awareness and attitudes toward Internet censorship.

3.3. Hypotheses

We investigate the following hypotheses to explain differences in attitudes toward censorship.

Hypothesis 1a. Males, people with higher education, urban residents, and younger ages should have *higher awareness* of Internet censorship.

Hypothesis 1b. Males, people with higher education, urban residents, and younger ages should display *lower support* of Internet censorship.

These hypotheses stem from various studies that find that (1) elderly people and women are more likely to support pornography censorship on the Internet and in film [Gunther 1995; Ho and Lui 2003]; (2) college students support content censoring on the Internet [Guo and Feng 2012]; and (3) urban citizens strongly support Internet regulation [Guo 2003, 2005, 2007]. Yet these results are based on asking about the abstract notion of Internet regulation and not based on asking about actual experience. We expect that men, the highly educated, urban residents, and younger users are more likely to be aware of Internet censorship. Similarly, we expect that these same demographics would be associated with lower support for censorship.

Hypothesis 2a. Users who adopt Internet earlier and use the Internet more frequently are *more* likely to be *aware* of Internet censorship.

Hypothesis 2b. Users who adopt Internet earlier and use the Internet more frequently are *less* likely to *support* Internet censorship.

Some studies find that users have different reactions when they experience Internet censorship in different Internet usage contexts [GIUS 2012; Shklovski and Kotamraju 2011]. It is possible that frequency of use may influence users' awareness toward Internet censorship simply due to more potential exposure. Frequency of use could also introduce more inconveniences for users when they experience censorship, leading them to be less likely to support censorship.

Hypothesis 3a. Users with stronger authoritarian values are *less* likely to be *aware* of Internet censorship.

Hypothesis 3b. Users with stronger authoritarian values are *more* likely to *support* Internet censorship.

Authoritarian personalities have attitudes consistent with obedience or submission to authorities [Altemeyer 1981]. The role of authoritarian values on Internet censorship has been proposed by MacKinnon [2011]. The Right-Wing Authoritarian (RWA) scale [Altemeyer 1981] has been translated and deployed in the context of Chinese culture [Huang 2007] and has also been widely used in assessing Internet users' authoritarian personalities [Guo and Feng 2012; Wan and Youn 2004], but the results are inconsistent. One study reports that the authoritarian personality is a predictor of pro-censorship attitudes [Youn et al. 2000], while another study reports it is not [Guo and Feng 2012]. One possible explanation for this inconsistency is that the Guo and Feng study did not use the full version, and used a very selective sample. We use the full version of the instrument in a larger general sample. We expect that people with high RWA scores would be less aware of, and more likely to support, censorship, because those who score high in the RWA respect and follow authority, and Internet censorship is regulated by the government.

Hypothesis 4a. Users are more likely to consider censorship as "normal," that is, a common feature of their Internet experience, if they have been exposed to Internet censorship for a *longer* period of time.

Hypothesis 4b. Users who consider censorship as "normal," that is, a common feature of the Internet, are more likely to support it.

The percentage of the Chinese Internet user population who supports the abstract concept of Internet censorship has continuously increased from about 80% in 2003 to approximately 90% in 2007 [Guo 2003, 2005, 2007]. Small incremental deviations in phenomena that are regularly experienced are often tolerated. Yet people who experience an abnormal phenomenon for a long time eventually can consider it to be normal, as over time "the bounds expand of what is considered normal" [Vaughan 1997]. The long-term awareness of Internet censorship may lead to users' acceptance of it. Thus, we hypothesize that the more frequently users encounter Internet censorship, the more likely they will accept it as a common practice and support it.

4. RESEARCH METHODS

We conducted a large-scale anonymous online survey in China. We defined the term *censorship* as the activities that censor content and websites on the Internet, and this may also include filtering, suppressing and blocking the content and the website. The survey was deployed for seven weeks from January 18 to March 9, 2014 using the SurveyMonkey.com [SurveyMonkey] online survey platform. The survey was in Mandarin. Survey questions that relate to research questions in this article are translated and shown in Appendix A.

4.1. Participants and Method

We recruited participants primarily through a snowball sampling method [Biernacki and Waldorf 1981]. The survey link was initially seeded to the authors' families, friends, and colleagues. The survey link was also posted on many Chinese online forums (e.g., Netease.com and Tianya.com), microblogs (e.g., Weibo.com and Tencent.com), social media websites (e.g., Renren.com), and universities' bulletin board systems (BBS). In addition, we asked all survey respondents to help us refer friends and social contacts to participate in our study. Since our goal was to understand general Chinese Internet users' awareness and attitudes toward Internet censorship, any person who used Chinese Internet services met our criteria and was included in the study.

4.2. Measured Variables

In the following, we explain the details of the survey's six sections and variables that we measure. Table I provides a summary of the variables and their explanations.

4.2.1. Authoritarian Personality. The authoritarian personality indicates the tendency to obey authority. To assess this variable's effect on users' perceptions of Internet censorship, we chose Altemeyer's RWA scale [Altemeyer 1981] based on the authoritarian personality theory developed by Theodor W. Adorno, and who extended Adorno's work of the California F-Scale [Adorno et al. 1950]. The original RWA has 22 items with 9-point Likert scale responses (strongly disagree as 1 to strongly agree as 9) for each question [Altemeyer 1981]. Twenty items are counted, so the final RWA score ranges from 20 to 180. A higher RWA score corresponds to the respondent's higher tendency to obey and submit to authority. Extreme scores are rarely seen. The average score of a sample of college students in a Canadian university was 75, and the average score of their parents is about 90 [Altemeyer 2006]. The average RWA score for a sample of 1,000 Americans was 90 in 2005 [Altemeyer 2006]. We used the full version translated into Chinese.

4.2.2. Users' Internet Usage Experience. As Internet users and non-users may have different attitudes toward Internet regulation [Fallows 2008], we asked details on usage: the year one first accessed Internet, daily Internet usage frequency, primary usage, and primary devices to access Internet.

Table I. Summary Table of Survey Sections and Measured Variables

Survey Sections	Variables	Explanations
Demographic information	Demographic variables	Age, gender, education, occupation, monthly income, residence location
Authoritarian personality	Users' authoritarian personality	RWA scale [Altemeyer 1981]
Internet usage experience	Internet adoption year	The year that users first accessed the Internet
	Frequency of using the Internet	Number of hours per day of Internet use
Awareness of Internet censorship	Awareness of Internet censorship	Whether or not users are aware of the existence of Internet censorship in China
Internet censorship experience	The year one first noticed Internet censorship	The year that users first heard of or experienced Internet censorship
	Frequency of experiencing Internet censorship	The number of times per month
	Personal censorship experience	Did users experience censorship themselves or hear about it from others and the media?
	Original normality rating	Did users consider Internet censorship as normal when they first heard of or experienced it?
	Current normality rating	Do users consider Internet censorship as normal when they experience it currently?
Attitude toward Internet censorship	Users' support of Internet censorship	7-point Likert scale
Political stance	Users' support of Chinese government	7-point Likert scale

4.2.3. Users' Attitudes toward Internet Censorship. At the beginning of the survey, we defined our concept of censorship, and provided four examples of censorship to promote participants to think about the concept similarly. We wrote:

> In this survey, we refer to Internet Censorship as "the activities that censor content and websites on the Internet, and this may also include filtering, suppressing and blocking the content and the websites." For example, (a) your searching result may be filtered out, (b) you are required to link your real identity with your online account, (c) you may not get your opinions published due to the sensitive keywords, and (d) your online accounts and contents may be removed by authorities.

After explaining the definition of Internet censorship and examples of such practices, we measured agreement with the following statement: "Generally speaking, I support Internet censorship in China." The question used a 7-point Likert format ranging from "strongly disagree" to "strongly agree." The score is our dependent variable in the pro-censorship attitude modeling analysis.

4.2.4. Users' Experience of Internet Censorship. We asked users: "Are you aware that Internet censorship exists in China?" We provided three categories of response: Yes, No, Don't know/Not Willing to Answer. As we wanted to focus on users who report being aware of Internet censorship, we then asked those who responded "yes" the year that they first noticed Internet censorship; whether they have experienced censorship personally or heard about it through the media or others; and if they experienced it, the frequency with which they experienced it.

In order to test Hypotheses 4a and 4b, we further asked two Likert-scale questions: to what degree users considered Internet censorship to be a normal practice (a) when they first noticed it and (b) currently. This enabled us to assess their perceptions of the normalcy of censorship over time.

4.2.5. Users' Political Stance. We explored how a user's political stance may be associated with their perception of Internet censorship. As previous work suggests that a user's party membership may not necessarily reflect their political stance and attitude toward the government [Guo and Feng 2012], we asked more directly (with a 7-point Likert scale): "Do you consider yourself a government supporter?"

5. RESULTS

We first present an overview of results on the data collected.

5.1. Demographic Overview

After 7 weeks' deployment, we collected 721 responses in total. We only present the analysis for respondents who completed at least the first three sections of the survey (listed in Table I), resulting in 547 respondents. We further excluded respondents from Macau, Hong Kong, Taiwan, and foreign countries ($N = 45$), as our intent was to focus on the respondents living in mainland China who experience censorship. The final dataset has 502 responses.

Table II compares the demographic backgrounds of our respondents with Chinese Internet users' demographic backgrounds from the annual survey report published by the Chinese government [CNNIC 2013]. Our sample includes users from different geographic locations and different social classes. Although the age of our sample is fairly young and the educational attainment is higher than it is in the entire Chinese Internet user population, it is a representative sample in terms of gender, age, and residence location for the general Chinese Internet user population. The top five occupational groups in our sample are Student (28.09%), Information Technology (12.35%), Health Care (8.96%), Other (including unemployed and freelancer, 8.76%), and Government (5.58%).

Table II also shows the demographic information for the subset of respondents ($N = 349$) who report being aware of Internet censorship. We define those users as Aware Users (AU), and others as Non-aware Users (NAU, $N = 145$). A considerable percentage of respondents (28.9%) report not being aware of the existence of Internet censorship in China, which arguably could have different influences on their Internet usage compared to those users (69.5%) who report being aware of censorship. A small number (1.6%) of respondents did not answer this question, so they were excluded from further analyses. As shown in Table II, the AUs' gender and age distribution is similar to the whole dataset. There are slight differences in respondents' educational attainment, monthly income, and place of residence information; for example, a larger proportion of urban citizens are in the subset of AU than in the whole dataset.

5.2. Internet Usage Experience

Many participants in our study reported that they started using the Internet before 2000, which is consistent with the fact that the Internet infrastructure was widely deployed at the end of the 1990s in China. After 2001, there was a steady increase of Internet users. Most respondents believe they are highly dependent on the Internet in their daily life. More than 85% of respondents answered they accessed the Internet more than 2 hours per day. These results align with other survey results that report that China has a high Internet penetration rate and that Internet use is as frequent as in Western countries [CNNIC 2013; Guo 2007].

The top three Internet uses are for: Work and Study, Entertainment, and Social Networking. The primary devices used to access the Internet are: smartphone, laptop, and desktop.

Table II. Demographic Information of Respondents in Our Survey, and of the Subset of Respondents Who Report Being Aware of Internet Censorship (AUs)

Value Types		All Respondents in Our Study ($N = 502$)	Chinese Internet Users [CNNIC 2013] ($N = 30{,}000$)	Censorship-Aware Respondents (AUs) ($N = 349$)
		%	%	%
Gender	Female	41.43%	44.40%	40.69%
	Male	58.57%	55.60%	59.31%
Age	<21	17.73%	24.50%	17.19%
	21–24	24.70%	N/A	22.92%
	25–29	33.07%	29.5%[a] (21–29)	35.24%
	30–34	12.15%	26.1%[a] (31–39)	12.89%
	35+	12.35%	19.8%[a] (40+)	11.75%
Education	High school/Lower	10.36%	79.70%	8.31%
	Bachelor	70.92%	20.30%[a] (Bachelor+)	70.49%
	Master/MBA/PHD	18.73%	N/A	21.20%
Monthly Income	<1,000 RMB (<160 USD)	16.53%	35.90%	14.33%
	1,000–2,999 RMB (160–480 USD)	29.81%	35%	31.81%
	3,000–4,999 RMB (481–800 USD)	21.91%	18.10%	21.78%
	5,000–7,999 RMB (801–1280 USD)	13.55%	6.50%	13.47%
	>8,000 RMB (>1,280 USD)	17.13%	4.70%	18.62%
Residence Location	Four largest cities by population (Beijing, Shanghai, Guangzhou, and Shenzhen)	39.44%	N/A	39.83%
	Other cities	33.47%	72.1%[a] (all cities)	38.11%
	Small towns and rural areas	27.09%	27.90%	22.06%

[a]This indicates the mismatches between our survey and the previous survey study [CNNIC 2013].

5.3. Research Question 1: Internet Censorship Experience and Awareness

Although the majority of respondents (69.5%) responded that they are aware of Internet censorship existing in China (AU), 4.8% of users believe that there is no Internet censorship in China, and 24.1% of users chose "not willing to answer the question/do not know." The latter two groups together make up NAUs (28.9%). 1.6% did not answer the question, which were then excluded in further analyses. This is an interesting finding, as many researchers have implied universal exposure to Internet censorship among Chinese Internet users [Fallows 2008; Guo 2007; Guo and Feng 2012; Ho and Lui 2003; MacKinnon 2009]. When previous survey studies investigated users' attitudes toward Internet censorship [Fallows 2008; Guo 2007; Guo and Feng 2012; Ho and Lui 2003; Shklovski and Kotamraju 2011], they did not distinguish between users who report not being aware of Internet censorship and users who have experienced it, even though the perception of censorship from these groups of users could be very different. Given that there are differences in awareness of Internet censorship, we next examine our hypotheses.

Table III. Respondents' Attitudes toward Internet Censorship or Controlling

	Our Survey	2007 Internet Usage Survey in China [Guo 2007]	2012 Global Internet User Survey [GIUS 2012]
Notion	Censorship experience	"Internet control"	"Censorship"
Sample	AUs Only ($N = 349$)	Citizens in 7 cities ($N = 2{,}001$)	Internet users ($N = 508$)
Oppose	30.40%	5.80%	9%
Neutral	22.90%	NA	1%
Support	42.70%	94.10%	89%

Hypotheses 1a and 2a. Demographic background and Internet experience influence censorship awareness.

We separated our respondents into two groups: AU and NAU. A t-test result shows that self-reported NAUs have a significantly lower level of educational attainment ($t(301) = -2.94$, $p < 0.01$) and lower monthly income than self-reported AUs ($t(298) = -2.30$, $p < 0.05$). NAUs live in areas with lower population density ($t(236) = 2.41$, $p < 0.05$), and do not use the Internet as frequently as AUs ($t(234) = -3.30$, $p < 0.01$). Users' gender and age attributes are not significantly different between these two groups. These findings partially support Hypothesis 1a and Hypothesis 2a, that is, that users from different backgrounds or with different Internet usage experience have different levels of awareness.

We next excluded NAUs to focus on AUs who explicitly indicated that they are aware of the existence of censorship. Our results show that 84.8% of AUs have experienced censorship personally, whereas 15.2% claim they became aware of the existence of censorship mainly through media exposure and third parties. Of AUs, 37.2% reported that they encounter censorship no more than once a month, which reflects that censorship is not commonly seen in their daily usage.

In summary, Chinese Internet users appear to have different awareness and experiences of censorship depending on their demographic data.

5.4. Research Question 2: Users' Attitudes toward Internet Censorship

In this section, we focus only on the AU's attitudes toward Internet censorship. We asked AUs to rate their agreement with the statement "Generally speaking, I support Internet censorship in China." We grouped respondents who answered strongly disagree, disagree, and slightly disagree as users who opposed censorship to some degree and clustered respondents who answered strongly agree, agree, and slightly agree as those who expressed some degree of support. Our results (Table III) show that almost half of AUs (42.7%) supported Internet censorship, whereas 30.4% of AU opposed it.

Hypotheses 1b and 2b. Demographic background and Internet experience influence censorship attitudes.

Table IV shows that participants' monthly income level and residence population density negatively correlates with their pro-censorship attitudes. Users' Internet usage frequency and first year of Internet adoption also negatively correlate with a pro-censorship attitude. It indicates that people with higher income, who live in bigger cities, who adopt the Internet earlier, and who use it more often are less likely to support Internet censorship. Users who personally experienced censorship more often are less likely to support it. And users who consider themselves as government supporters are more likely to support Internet censorship. Different genders also have different opinions toward censorship. Males reported less pro-censorship support (Mean = 3.94, SD = 1.71 out of a 7-point scale) than females did (Mean = 4.43, SD = 1.51, $t(314) = 2.74$, $p < 0.01$). Although there is no significant relationship between participants' age

Table IV. Correlations between Users' Pro-Censorship Attitudes and Other Variables

Variables	Pro-censorship Attitude
Age	–0.04
Monthly income	–0.27**
Internet adoption year	–0.21**
Population density of residence place	–0.18**
Internet usage frequency	–0.14**
Year of first notice censorship	–0.30**
Frequency of censorship experience	–0.24**
Government supporter rate	0.47**

Note: $N = 335$. AUs only.
**Difference is significant at the 0.01 level.

or education background and their pro-censorship attitude, these findings partially support Hypothesis 1b, and Hypothesis 2b that users' demographic background and Internet usage experience influence their attitudes toward censorship.

Hypotheses 3a and 3b. Authoritarian personality values and Internet censorship awareness and support.

Our respondents, including both AUs and NAUs, have an average RWA score of 93.4 ($N = 502$, SD = 15.70). Not surprisingly, a user's RWA score correlates with her demographic background. Similar to previous findings of the authoritarian personality [Adorno and Frenkel-Brunswik 1950; Altemeyer 1981], our study shows that males (Mean = 95.01, SD = 16.30) have higher RWA scores ($t(500) = -2.68$, $p < 0.01$) than females (Mean = 91.23, SD = 14.51). RWA negatively correlates with educational attainment ($r = -0.14$, $p < 0.01$, $N = 502$), income level ($r = -0.16$, $p < 0.01$, $N = 502$), and the residence population density ($r = -0.14$, $p < 0.01$, $N = 502$). Thus, male respondents from less-educated and lower income classes and those who are from rural areas show a higher tendency toward an authoritarian personality.

A user's RWA score is also highly correlated with his/her tendency to support the government ($r = 0.37$, $p < 0.01$, $N = 443$). This finding is consistent with the premise that people with high authoritarian tendencies are more likely to support the Chinese government. As Guo describes, "The Chinese government is perceived by the users as the only legitimate authority in China" [Guo 2003, 2005, 2007].

Interestingly, users' RWA scores are also correlated with their Internet usage experience. Users who use the Internet less frequently ($r = -0.13$, $p < 0.01$, $N = 502$) or who have adopted the Internet later ($r = -0.11$, $p < 0.05$, $N = 502$) are more likely to have higher RWA scores.

In testing Hypothesis 3a, users who are not aware of the existence of Internet censorship (NAUs) have higher RWA scores ($t(333) = 3.36$, $p < 0.01$). This finding supports Hypothesis 3a that it is not only users' Internet usage habits and demographic backgrounds but also authoritarian attitudes that are correlated with whether users have experienced censorship.

In addition, the RWA score for AUs (we present only the AUs' scores, as we did not collect NAUs' attitude of censorship) is also strongly correlated with a pro-censorship attitude ($r = 0.53$, $p < 0.01$, $N = 335$). This result supports Hypothesis 3b, that AUs who have authoritarian values are more likely to support Internet censorship.

Hypotheses 4a and 4b. Normalization of Internet censorship perceptions.

Users' ratings of the normality of censorship are highly correlated with their pro-censorship attitudes, both when they first noticed it ($r = 0.64$, $p < 0.01$, $N = 332$)

Table V. The Beta Coefficients of Variables for the Best-Fitting Model for Pro-Censorship Attitude

Dependent Variable	Independent Variables	β	S.E.	p
Pro-censorship Attitude	(Intercept)	0.47	0.52	0.37
	RWA score	0.04	0.01	<0.01
	Government supported	0.29	0.06	<0.01
	Year first noticed censorship	–0.06	0.02	<0.01
	Frequency of encountering censorship	–0.11	0.04	<0.05
	Monthly income	–0.08	0.04	<0.05

Note: $N = 286$. Adjusted $R^2 = 0.42$.

and currently ($r = 0.73$, $p < 0.01$, $N = 332$). This result supports Hypothesis 4b that users who consider censorship as normal with Internet usage are more likely to be pro-censorship users. However, we feel that the interesting finding is that normality ratings change. A paired sample t-test shows that users consider censorship more normal currently compared to when they reported first becoming aware of it ($t(332) = 3.381$, $p < 0.01$). This finding supports Hypothesis 4a that users' perception of the normality of censorship changed over time. After an average of 5.1 years with Internet censorship, users more easily accept censoring activities as a normal phenomenon.

5.5. A Model Predicting Users' Support of Internet Censorship

Here, we present a model, which takes all relevant variables into account in order to determine which ones are predictive of a Chinese Internet user's pro-censorship attitude. We ran a multiple linear regression analysis in SPSS using the stepwise method to select the best-fitting model. The dependent variable was users' pro-censorship attitude, as measured by participants' responses to the question, "Do you support Internet censorship activities in China?" As we do not have previous knowledge of what variables might be predictive, we included all variables that we felt were relevant to users' attitudes toward Internet censorship as independent variables. Table V shows the best-fitting model (Adjusted $R^2 = 0.42, F(5, 281) = 42.35$). All variance inflation factors (VIF) of these variables are less than 1.39, indicating that multicollinearity is not a problem. $N = 286$ cases is smaller than in our previous analyses because many respondents skipped one or two questions in the middle, and the pro-government attitude question is the last one of our survey.

The overall model accounted for 42% of the variance explained in participants' final attitude toward censorship. The model revealed that the higher a user's RWA score (i.e., the more likely (s)he has authoritarian values), the higher (s)he rates herself as a government supporter, the later (s)he becomes aware of censorship, the less frequently (s)he encounters censorship, and the lower monthly income (s)he has, the more likely (s)he supports Internet censorship. (If we include only the RWA score variable, the adjusted R^2 is 29%, which explains one fourth of the variability of their attitudes toward Internet censorship.)

6. DISCUSSION

In this article, we investigated users' perceptions (awareness and attitudes) and experiences of censorship in the context of the Internet in China. We found that users who report being aware of censorship have different demographic and personality measures compared to users who claim they are not aware of its existence.

6.1. User's Awareness and Attitudes toward Internet Censorship

Our results suggest that not all users are aware of censorship. About 70% of respondents reported that they have awareness of censorship, whereas 30% of them reported

Table VI. Summary of Results of Research Questions and Hypotheses

	Question Descriptions	Hypotheses	Hypotheses Descriptions	Results
Research Question 1	Chinese Internet users' awareness of the existence of Internet censorship	–	–	69.5% of users reported being aware of the existence of Internet censorship; 4.8% did not believe it exists in China; 24.1% chose "not willing to answer/don't know".
Research Question 2	Chinese Internet users' attitudes toward Internet censorship	–	–	42.7% of AUs support Internet censorship; 30.4% oppose its existence (AU only).
Hypothesis	What could explain the different levels of awareness and attitudes	Hypothesis 1a	Males, higher education, urban residency, higher income and younger age are associated with higher awareness of Internet censorship.	Partially supported. Higher education, urban residency and higher income are associated with higher awareness.
		Hypothesis 1b	Males, higher education, urban residency, higher income and younger age are associated with lower support of Internet censorship	Partially supported. Males, urban residency and higher income are associated with lower support of censorship. (AU only).
		Hypothesis 2a	Users who adopt Internet earlier, and use the Internet more frequently are more likely to be aware of Internet censorship.	Supported
		Hypothesis 2b	Users who adopt Internet earlier, and use the Internet more frequently are less likely to support Internet censorship.	Supported. (AU only).
		Hypothesis 3a	Users with stronger authoritarian values are less likely to be aware of Internet censorship.	Supported.
		Hypothesis 3b	Users with stronger authoritarian values are more likely to have positive attitudes toward Internet censorship.	Supported. (AU only).
		Hypothesis 4a	Users who have been aware of Internet censorship for longer are more likely to consider censorship as a normal feature of their Internet experience.	Supported. (AU only).
		Hypothesis 4b	Users who consider censorship as a normal feature of the Internet are more likely to supportit.	Supported. (AU only).

no awareness or chose not to respond. Among users who reported having awareness, 42.7% of them support Internet censorship, 30.4% are against it, and the rest hold a neutral opinion. Although there are no existing studies that focus on Internet users' attitudes toward censorship based on users' direct experience, we can compare our results with previous survey studies using Internet censorship as an abstract concept, in which 80%–90% of participants supported controlling the Internet, as shown in Table III [GIUS 2012; Guo 2003, 2005, 2007]. This twofold difference between the studies in supporting Internet censorship, suggests one of two things: (1) that users may be more likely to support Internet regulation in the abstract or (2) that users may be less likely to support Internet censorship (arguably as well as other Internet controlling mechanisms) once they are aware of the existence of censorship. We are not saying our result is more accurate than the previous studies as the education level is indeed different between the respondents in our study and in [GIUS 2012] and in Guo's studies [Guo 2003, 2005, 2007], which may influence the result. However, we just want to point out how different the results are if we focus on the users who have censorship awareness. We believe combining AUs and NAUs (or even non-users) to study the experiences and perceptions of Internet censorship may have led to biased results in past studies [Fallows 2008; Guo 2003, 2005, 2007]. These results were used by Chinese authorities, which may have led to the wrong policy-making direction [Xinhua.net 2009].

Our findings show that users' demographic characteristics not only correlate with their awareness of censorship, but also associate with their attitudes toward censorship. Our findings could suggest that users with higher education, of a higher social class, or who live in large cities could be more exposed to discussions of Internet censorship, which affects their awareness. The pro-censorship attitude and the lack of awareness of censorship are associated with gender (men are less likely to support it), negatively associated with monthly incomes and the population density of residence location. As a previous study shows that gender relates to acceptance of pornography filtering [Ho and Lui 2003], we cannot determine whether women are more likely to support the censorship of all kinds of content or just a particular type. More work need to be done to understand the relationship of users' demographic factors and their attitudes toward the Internet censorship of different kinds of content.

User awareness of censorship is also correlated with their Internet experience. Our data show that the earlier users adopted the Internet, or the more often they use the Internet, they are more likely to report being aware of censorship. This assumption that users' Internet experience may influence their perceptions of censorship has been proposed in previous studies [Guo and Feng 2012; Shklovski and Kotamraju 2011] but has never been verified using empirical data.

We focused primarily on users who self-reported being aware because we wanted to investigate users' perceptions of directly experienced censorship. Our results showing that 42.7% of users support censorship is in contrast to previous studies in which 80% to 90% of respondents support controlling the Internet [GIUS 2012; Guo 2003, 2005, 2007]. The difference of our respondents' pro-censorship attitudes from these other studies can be considered from two perspectives. First, the sample populations in these three studies are different. The 2007 survey study [Guo 2007] investigated urban residents including both Internet users and non-users. The lack of direct Internet experience could be one major reason why citizens supported regulations on Internet content. Although a 2012 study focused on Internet users [GIUS 2012], it did not distinguish between users who have censorship experience and those who are unaware of Internet censorship. Therefore, the high support rate for censorship in that study could be attributed to the NAU population because they have not experienced the inconvenience of censorship. In our study, we focus on censorship-aware users who have either

directly experienced Internet censorship or have heard of it from the media or third parties. Thus, they have a more tangible experience with censorship; it is, therefore, understandable that they have less supportive attitudes toward it, which implies that censorship does affect users' Internet experience and introduces inconvenience. On the other hand, it is also possible that self-reported AUs are not afraid to say negative things. More users may have awareness of censorship but may simply not want to report it.

Secondly, we defined censorship terms more carefully than previous surveys, which conflated the abstract notion of Internet censorship with actual censorship experience [Guo 2003, 2005, 2007; Guo and Feng 2012]. In Guo's 2007 survey [Guo 2007], participants were asked, "Should the Internet be managed or controlled?" The phrase "managed and controlled," is hypothetical and may not reflect the range of people's perceptions of actual Internet censorship. However, based on this question, the authors claimed that the majority of Chinese citizens support Internet censorship, which seems to be an overly broad claim based on their evidence. The 2012 survey phrased the question as "Do you agree: censorship should exist in some forms on the Internet?" [GIUS 2012]. This question is more direct when compared to the 2007 survey. Yet without a clear definition written in the survey, the term "Internet censorship" remains abstract and unclear, and respondents' answers may not accurately reflect their perceptions and attitudes toward censorship.

Our results show that nearly half of users support Internet censorship. Although censorship can bring benefits (such as filtering out inappropriate content for children) [Fallows 2008], these benefits are based on the authorities' needs instead of users' intentions. This could be potentially harmful for the society and its Internet users [Shklovski and Kotamraju 2011].

Our results of users' awareness are based on their self-reported data. However, we cannot claim that users who chose not to respond are not aware of censorship. There are multiple reasons why users reported they are not aware of the existence of Internet censorship in China. One reason might be that they have concerns about the consequences of their participation in the study. As explained in the Pew study, Internet censorship is a politically sensitive topic in China [Fallows 2008]. Some participants may not trust us as researchers, so they may fear to say negative words about the government, even though we have ensured our participants full anonymity in this study. We can tell from the data that after answering demographic information questions, 2.4% of participants chose "not willing to answer" to the first question about the censorship topic, 1.6% of participants did not answer this question, and another 21.7% of participants chose "don't know," which could be a polite way to refuse answering the question in the context of the Chinese culture.[1]

Another reason why users may not have reported being aware could be that Internet censorship is not commonly seen in their daily Internet usage even though it is arguably sophisticated and pervasive in China. They may not have intentionally hidden the truth, but because its occurrence could be so rare, users may not notice it or remember it afterwards. Some questions in our survey might provide support for this possibility. For instance, more than 85% of our participants reported using the Internet more than 2 hours per day; meanwhile, about 60% of AUs reported that they experience censorship less than once a week. This is a low appearance of frequency of censorship considering users' heavy Internet usage. Therefore, it is possible that users might have experienced censorship rarely and have forgotten it. This finding provides clues that Chinese Internet censorship techniques are seamlessly embedded in the Internet, and it is possible that users may barely notice it.

[1]This is the interpretation of the first author, who grew up in the Chinese culture.

6.2. Users' Authoritarian Personality and Perceptions of Internet Censorship

Users who measure having higher authoritarian tendencies are more likely to support censorship. This finding is consistent with previous studies in which authoritarian personalities affect users' attitudes toward Internet pornographic censoring, or the censorship on TV and magazines [Gunther 1995; Ho and Lui 2003; Youn et al. 2000]. Our study adds to this body of work showing that authoritarian personalities might also relate to users' attitudes toward general Internet censoring practices.

Since users' authoritarian personalities correlate with both their Internet usage experiences (e.g., Internet usage frequency and primary usage) and censorship experience (e.g., awareness and attitude), we might expect that other personality traits (e.g., the Big Five) could be associated with or even lead to different user experiences of the Internet and censorship, as proposed in various studies [Gunther 1995; Ho and Lui 2003; McKenna and Bargh 2000]. It could also be possible that Internet usage and censorship experience affects personality development and could possibly even contribute to changes in personality traits or political stance. It has been suggested that individuals' Big Five personality traits do change throughout early and middle adulthood due to various influences [Srivastava et al. 2003], and Internet users political views may be influenced by their Internet use [Wu 2013]. However, it requires further research in order to examine the direction of causality of Internet usage and censorship experience and personality.

6.3. Implications for Attitudes of Censorship beyond China

Our results show that our sample of Chinese Internet users has an average RWA score of 93 on a 20–180 scale. As reported by Altemeyer [2006], the average score of college students from multiple North American universities is around 75, and 90 for their parents. Altemeyer also cites that the average score of 1,000 representative Americans is about 90. Our sample of Chinese adult Internet users thus has a similar average RWA score compared to the American adults' scores in various studies. Surprisingly, this shows that Americans and Chinese may not be that far apart in their authoritarian values. Therefore, we might expect that our findings on users' perceptions toward censorship in China could have implications for user perceptions of censorship in the United States and other Western countries. Although we acknowledge differences in government structures and cultural contexts between China and other countries, our results suggest a potential for pro-censorship attitudes to develop in countries beyond China.

Although compared to China, the Western world currently does not have massive sophisticated censorship mechanisms, Verhulst [2006] suggests that we need to be aware that more and more countries are deploying, or are intending to deploy, various censorship practices. A few Western countries have already justifiably developed Internet censoring practices. For example, France censors Nazi-related content and blocks access to those websites [Roberts et al. 2009]. Although the United States has not yet censored the Internet, it has adopted ubiquitous Internet surveillance to monitor its citizens through the National Security Agency, as revealed in the Snowden affair [Greenwald et al. 2013]. One might argue that France censors only particular types of content, and the United States uses only surveillance, which is not censorship, under the guise of protecting the public good and state security. However, China, as well as Burma, Tunisia, and Uzbekistan, also censors only certain types of content under the same proposal of protecting the public good [Deibert and Rohozinski 2010], so where the censorship line is drawn is thus important. In addition, compared to the United States, China also has pervasive Internet surveillance that serves to assist its Internet censorship process because the fundamental technologies are not so different. Therefore,

the Internet control techniques in those industrialized democratic countries could easily expand into overt censorship in the future.

Previous studies suggest that various Internet censorship practices could eventually be deployed in many countries [Kalathil and Boas 2001; Roberts et al. 2009]. The reason behind this is that the Internet is the most active public place for exchanging information [Habermas 1989; Poster 1997]. Governments may want to control this information flow. As Manuel Castells [2013] claims, "the power in the information era is based on the control of communication and information." Internet censorship is a sophisticated way for a government to control information, and therefore, enhance its power and thus could be a prime motive for governments to develop Internet censorship.

Our results thus support MacKinnon and other researchers' notion of "networked authoritarianism" and could imply that if Western countries such as the United States start to widely deploy Internet censorship in the future, its users in such countries may not have very different attitudes of censorship compared to the Chinese users in this study. U.S. Internet users do not differ from Chinese users in terms of gender and age, Internet usage habits, or authoritarian values. Thus, our study's findings can potentially generalize to users in other countries.

If the expanding trend of Internet censorship deployment is inevitable, we need to pay more attention to it from the users' perspective. As Taneja and Wu [2014] suggested, Internet censorship involves more than the sole function of interfering with user behavior. Instead, it should be considered as one of many aspects of the Internet. Users' various interactions with this system deserve further investigation.

Our findings are also consistent with the result of Angela Xiao Wu's [2013] work, in which she used the Chinese Political Compass self-assessment (2008–2011) data, and found that Chinese Internet users have polarized political ideologies. From our data, we can see that a substantial portion of Chinese Internet users are not aware of the existence of Internet censorship. Even among those reported AUs, we found conflicting attitudes toward support of censorship, which confirms that users are polarized.

6.4. Censorship as Normal

Our data show that users' perceptions of Internet censorship are dynamic and changeable. We found that users with longer Internet usage experience report being more aware of Internet censorship than newer users. We also found that users currently view Internet censorship more "normal," compared to when they first encountered Internet censorship. This finding suggests that users may accommodate to censorship. This finding aligns with previous studies that show how norms develop along with the usage of information technologies [Kiesler et al. 1984]. An interpretation of the NASA Challenger shuttle launch failure was that engineers gradually accepted abnormal warnings as normal phenomena, which in turn led to the final disaster [Vaughan 1997]. This normalization of deviance is also commonly seen in conditions of crisis and violence [Bradbury 1998]. For example, a malnutrition rate above 30% (10%–20% is considered sufficient to trigger major relief intervention) was considered normal in the displaced population in Sudan in 1989 [Karim et al. 1996]. Violence can be viewed as normal over time in societies that regularly experience it, as with children who acclimate to violence if they are exposed regularly to community violence [Boxer et al. 2008].

Thus, even though there might be an uprising against censorship at first (e.g., as happened together with the protests in Shifang in 2012 and Wukan in 2011, China [Zhu et al. 2013]), our results suggest that users are more likely to accept it as a normal consequence of Internet use as time passes. This is consistent with Wu's speculation that Internet users' political views are changeable and may be influenced by their Internet use via the Internet's different mechanisms. Censorship itself is one of

those mechanisms [Wu 2013]. However, a longitudinal study is needed to more deeply examine this idea.

6.5. Limitations

Our participants were mostly highly educated (more than 80% of them at least have a bachelor's degree). They do not represent the real population of Chinese Internet users (about 80% of which have less than high school educational attainment [CNNIC 2013]). Compared with previous survey studies, GIUS [2012] did not report their respondents' education level. Guo's [2007] survey focused on the Chinese citizen population but not the Internet users' population, in which he reported that among the Internet users subset, about 72% have a bachelor's degree, but he reported the pro-censorship attitudes result only from the citizen population. Our results can thus only be generalized to the highly educated Internet user population. Nevertheless, we believe that our findings can provide insights about the general population's awareness and attitudes of Internet censorship. One reason is that our sample does have diverse residence and monthly income levels, and participants are from different social classes. In addition, users' educational attainment positively correlates with their awareness of censorship and negatively correlates with their pro-censorship attitudes. Because Chinese Internet users generally have relatively lower educational attainment compared to our sample, our results thus suggest that the wider population may follow these trends and have a lower level of awareness and a higher level of support for censorship.

Another limitation was that we did not collect data on attitudes toward censorship from NAUs (28.9%). They certainly could have different opinions and attitudes toward Internet censorship even though they chose not to answer the question or they reported that they were not aware of its existence. Being fearful of the pervasive government surveillance could be one reason for choosing these answers. However, we believe that investigating AUs' censorship experience and attitudes is sufficient because (1) if NAUs are truly not aware of Internet censorship as they reported, it should not affect them; (2) if some NAUs are indeed aware of Internet censorship but they chose not to report it due to various reasons, they may not report their censorship experience and perceptions honestly; and (3) Internet service designers and Internet policy makers would be better served to draw on AUs' opinions about censorship if they want to get the real user experience of censorship. It is similar to asking user experience and feedback about a product from people who have actually reported using it. Because we cannot know if NAUs have experienced censorship and because their attitudes may not represent the affected users' attitudes, they may even mislead the understanding of policy makers and Internet service designers.

We acknowledge that users' attitudes toward Internet censorship can be dynamic. Their attitudes may vary depending on different types of censorship practices, or they may vary with context. Last, another limitation is that we did not ask users' attitudes on every specific type of censorship. For example, the same user may support censoring pornographic content but oppose deleting politically sensitive topics.

7. CONCLUSION

Our findings suggest explanations for why users have different awareness and perceptions toward Internet censorship. Users' demographic characteristics, such as educational attainment and monthly income, can explain one part of the result. Users' Internet usage experiences, such as Internet usage frequency, are additional factors. The authoritarian personality trait was shown to influence why users hold different censorship perceptions and attitudes.

We feel our findings are more focused than previous studies in terms of understanding users' perceptions of the Internet censorship experience. Our goal was not to judge

whether censorship is good or bad; rather, we aimed to more precisely explore how users perceive it once they have experienced it, and further, we wanted to facilitate improved regulation policies and technological designs.

Our findings reveal Americans and Chinese may not be that dissimilar in their authoritarian values. Since we found also that authoritarian values are correlated with Internet censorship support, there could lie a potential for Americans to be susceptible to accepting Internet censorship. It is not impossible or unreasonable to think that Internet surveillance of Americans (and surveillance is also now being developed by other European countries' governments) could expand into censorship practices in the future.

Previous studies that investigated users' interaction with Internet censorship viewed censorship only as an interference technique that the authorities used to restrict people's access to certain information. However, we believe that Internet censorship is a system that is part of the larger Internet ecosystem. It evolves together with the users. Censorship can influence users' behavior on the Internet, and in turn, as we have seen so many examples of, users can interfere with the censorship mechanism, for example, in circumventing it. Censorship can also influence perceptions in blatant and subtle ways. A danger of censorship is when through familiarity, it begins to be perceived and accepted as normal.

Though effort from academic researchers, policy makers, activists, and technology designers has been devoted to the technical perspective of Internet censorship, insufficient attention has been given to the user's perspective. Many technologies such as VPN have been developed and promoted to help people who live under Internet censorship bypass the authorities' technical constraints. However, it always depends on how the technology is governed, perceived, and used. As MacKinnon [2011] stated, "If people do not wake up and fight for the protection of rights on the Internet, we should not be surprised to wake up one day to find that they have been legislated and sold away."

We suggest that our findings may have important implications for Internet policy makers and Internet service designers in not only China but also other nations. The Internet and other information technologies connect the world together and diminish the boundaries between countries and people. Citizens globally share similar Internet services and many governments adopt similar Internet policies and regulations. Therefore, citizens in Western countries may not be so different to the Internet users in China. Perhaps if citizens live in a country where the Internet becomes censored, they may gradually accept it as normal over time. An acceptance of Internet censorship as normal is a fundamental threat to the free exchange of information.

ELECTRONIC APPENDIX

The electronic appendix for this article can be accessed in the ACM Digital Library.

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