

How Chinese Netizens Discuss Environmental Conflicts? Framing and Functions on Sina Weibo

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Abstract

This study explores how China's indigenous social media *weibo* was used in the discussion of seven major cases of environmental pollution and related unrest between 2010 and 2012 in China. We found that the majority of Chinese netizens frame these incidents as conflicts between "the state and the people", and economic development and citizen's well-being, and attribute responsibility for the wrongdoing to the government. In terms of communicative functions, weibo creates a public sphere for articulating critical opinions as well as requesting and sharing information about the cases, but also expressing strong emotions. We developed a specific research design that helps conduct empirical research (select cases, accumulate data, analyze content, and interpret results) in a censored media environment. In this sense, we present an exercise in de-Westernization (specifically, Sinification) of the methodology of social media research.

Keywords: social media, weibo, environmental conflicts, China, online methodology, public sphere, framing, communicative functions, De-Westernization, Sinification

Introduction

Since the emergence of the Internet, and particularly the boom of social media, many scholars have discussed and envisioned the potential of online communication to create a more open public sphere. In China, there are also expectations that social media could contribute to civic engagement and democratization of the authoritarian regime (e.g., Shao et al., 2012). However, despite fervent discussion, few studies have been crafted to examine the role of social media in the Chinese public sphere with empirical data.

In this study we explore how environmental incidents are discussed in the social media in China. Over thirty years of rapid economic development has brought China tremendous changes in terms of modernization and industrialization. At the same time, a consistent overlook of environmental problems have also brought unprecedented environmental degradation (Liu & Diamond, 2008). Several recent high-profile environmental conflicts have revealed the underlying and increasing tension between economic development and citizens' well-being. At the same time, online discussions of the incidents also highlighted the important contribution of social media to the public sphere in China.

This study examines the social uses of China's indigenous microblog platform Sina Weibo in major environmental conflicts and assesses their contributions to public discussion in the complex media and political landscapes of China.

Contexts: social media, propaganda/censorship, and environmentalism in China

Our study is situated in the overlapping areas of several academic discourses and research agendas. We argue that instead of directly employing Western concepts and discussions of the potential power of social media, we need to reflect on the specific political and media contexts of China. These include the relationship of social media and civic engagement in China; online propaganda and censorship; and the environmental public sphere and its interaction with traditional and social media in China.

Internet, social media and civic engagement in China

Following the argument that communication technologies must be examined within the specific social contexts of a society (Howard and Jones, 2004), several scholars have pointed out that the Western concept of the public sphere (Habermas, [1962] 1989) should not be rigidly applied in the study of the Chinese media, which differs tremendously from the Western media (Huang, 1993; Wakeman, 1993; Harp, Backmann, and Guo, 2012) and that many media phenomenon in China require high sensitivity of the political, social, and cultural contexts (Yang, 2011).

According to official statistics, China had 538 million Internet users by mid- 2012 (CNNIC, 2012), which is much larger than in any other nations. The quickly growing size of Internet

users in China has brought hope that online discussions will help facilitate civic engagement and China's transition to a more democratic regime (Shao et al., 2012). Social media, which started to flourish in China a few years ago, have certainly become the center of such hope. Chinese Internet users spend 46 minutes a day on average on social media sites. This is 39 minutes more than Japanese netizens and 9 minutes more than those in the United States (Chiu, Lin and Silverman, 2012).

The democratizing potential of social media in China has been discussed specifically in the context of the political environment (one-party authoritarian rule, lack of rule of law and human rights, including freedom of speech) and the history of citizen participation in political issues. Shao et al. (2012) notes that while there has been a growing dissatisfaction with the government, most Chinese citizens tend to be politically disengaged because of the lack of rights and legal procedures that encourages robust civil engagement. Yang (2011) also points out that the use of new media by protesters in China is socially conditioned by the lack of institutional channels for dissent and redressing grievances. However, the fast development of new media has the potential of improving civil engagement in social issues by providing information, articulation, and channels for civic engagement and motivating citizen participation and therefore pushing for democratization in China (Shao et al., 2012).

Among all kinds of social media platforms in China, *weibo*, literally the Chinese term for "micro-blog", has gained phenomenal popularity. The two dominant domestic weibo service providers are Sina Weibo and Tencent Weibo. According to official statistics, by mid-2012, there were 274 million weibo users in China. This means that among all the Chinese netizens, more than half (51%) had a weibo account (CNNIC, 2012). Survey results indicate that among all social media users, 70% have registered a weibo account (Yang and You, 2012). Hereafter we use the word "weibo" to refer to either a genre of online writing and messaging, (i.e., "a weibo post"); or the social medium and platform in general (where it means "micro-blog"). The uppercased word "Weibo" refers to particular weibo service providers like Sina Weibo.

In terms of communication options and applications, weibo is often compared to Twitter. One may argue that weibo is more social in terms of the openness of networks, applications and multimedia choices than the early version of Twitter (Chen et al, 2011). The platform allows its users to publish posts within 140 Chinese characters or 280 Western characters, with the attachment of video, pictures, or links to external web pages. On the home page of each user's account, there is a "timeline", showing the user's weibo messages, typically consisting of text and thumbnails of pictures, in a chronological order. Weibo users can subscribe to (follow) other users' weibo accounts, and repost (the equivalent of retweet) other users' posts. However, the weibo platform also allows users to post comments in the format of traditional online forum (there is no such function in Twitter). These comments do not automatically show up in the users' timeline but are attached to the original post. The comment contributor also has the option to repost the comment. Moreover, weibo users can directly send private messages to any user, including those who do not subscribe to them (which is not allowed on Twitter).

Weibo may look like an ideal online service for public discussion compared with other social media platforms because of its openness. Connections on the platform are not restricted to one's social networks. This downplays the importance of users' personal backgrounds and makes weibo an open space for the discussion of public issues. It gives an opportunity for a fairly large degree of self-expression and hence encourages civic participation in political discussion more than other forms of online publication.

Social media and censorship: the online political context in China

As we discuss the implications of social media for public discussion, we must take into consideration the general media landscape of China. Media in China in the official discourse are conceptualized as a battlefield for public opinion and utilized for top-down propaganda, i.e., targeted promotion of party ideology. The Chinese government also explicitly justifies its online censorship in a white paper on "The Internet in China", having realized the importance of the online public sphere and the spread of online dissent (Yang, 2011). According to the white paper, while the government plans to promote extensive Internet use, it must also curb the harmful effects of illegal information on state security, public interests and children (Bristow, 2010).

China implements a plethora of practices to oversee domestic Internet usage, including online filtering mechanisms, licensing of cybercafé operators, Internet police and punishment system for those who violate relevant regulations (Cannici, 2009). The censorship and surveillance system also adopts what is known as the Great Firewall that denies access to key Western news sites (e.g. CNN), search engines (e.g. Google), and social media (e.g. Facebook, Twitter, Youtube) in China. At least 18,000 foreign websites are blocked within mainland China (Zittrain and Edelman, 2003). Content concerning sensitive issues on foreign search engines and discussion boards are often the target of censorship. A connection containing censored terms may also be closed by the Great Firewall, and cannot be reestablished for several minutes (Tsui, 2001).

Besides direct state control of the Internet, online companies in the private sector also have to implement self-censorship to keep their operating licenses and to avoid other penalties (MacKinnon, 2010). Social media in China are constrained by the same set of censorship rules as all other online information services. China's most popular social media platforms, such as Sina Weibo and *Renren.com*, set strict controls over the posts in their services. Posts containing blacklisted keywords and comments on sensitive political topics cannot be actually published (posting is prevented by a pre-publication censorship software), or are swiftly deleted after posting (by human censorship or software). It is believed that Sina Weibo employs approximately 1,000 human web monitors for censoring the posts of its users (MacKinnon, 2011).

To survive in this political context, some social media strategically positioned themselves as platforms for entertainment and leisure-related information exchanges (Ma, 2010). A study on the trends of social media has found that in China the majority of the most reposted posts on

weibo are related to entertainment and leisure activities rather than current affairs, whereas the most discussed topics on Twitter are highly related to contemporary news events (Yu, Asur and Huberman, 2011).

However, despite the tight Internet control in China, empirical evidence indicates that a variety of political activism and expression exists in the social media. Yang (2011) describes the impact of China's social media on politics as a gradual (r)evolution. Jiang (2010) argues that institutional democracy is not prerequisite to public deliberation. Despite the fact that the government constantly restricts the boundaries of the political public sphere in China, cyberspace does serve as a place for Chinese netizens to challenge the status quo of politics. In this sense, the flourishing public deliberation in China, as argued by Jiang (2010), could be viewed as "authoritarian deliberation" in the absence of pluralist democracy.

Environmental problems and unrest in China

The third context of our project is provided by the environmental problems and related social discontent in the country. One of the by-products that rapid economic growth brought to China in the past few decades is dramatic environmental degradation. The country ranks among the bottom on the world's environmental sustainability index. Although the goal of turning the tide of environmental degradation is always on the country's Five-Year Plans, environmental issues are constantly overlooked in local governance, as the primary criterion for promoting leaders is economic growth (Liu & Diamond, 2008).

China's environmental activism is situated in a political context that does not allow generating contentious social movements (Ho, 2001). Genuine social movements, including a sustained green movement, have been therefore absent from China's protest landscape. Although environmental deterioration (and corruption) are identified by citizens as the major problems facing the state today, environmental movements in China tend to be scattered, sporadic, and often located in rural areas and motivated by single incidents rather than more comprehensive agendas that aim at a nation-wide change (Ho, 2001; Hess, 2011). Many cases of local pollution lack publicity and support from social elites, so they tend to be suppressed and do not get enough governmental attention to solve the problem. Lawsuits can usually not offer effective ways to solve the problems, since many cases go hand in hand with other social problems such as corruption and the general lack or rule of law.

However, the outbreak of several large-scale environment-related unrests in recent years has highlighted the deeply rooted conflicts between economic growth and citizens' quality of life, and brought environmental issues to the public agenda. The development of the environmental public sphere is to some extent representative of the general development of the public sphere in China, in which the public, various civil associations, the media and policy makers engage in organic interactions (Calhoun and Yang, 2007). In recent years, the country was also shaken by the discovery of "cancer villages", where mortality rates increase dramatically due to sustained pollution, as well as urban conflicts around environmental deterioration.

Research Questions

Considering these contexts, this paper investigates the uses of social media in China's public sphere by exploring communication content and communicative functions regarding seven major cases of environmental pollution and related social unrest on Sina Weibo. We attempt to answer two sets of questions:

1. *Empirical and conceptual questions.* How do Chinese netizens use social media to discuss environmental incidents as a public issue? On the one hand, what are the *cognitive frames* of interpretation that netizens use in their posts to make sense of, and argue about, major cases of environmental pollution (or its threat) and related social discontent? On the other hand, what are the *communicative functions or purposes* of weibo posts? In other words, how is weibo used; what are the functions it is used for? While framing analysis captures how environmental conflicts are discussed in social media, it does not reflect the multiple ways weibo is used as a multi-functional, popular platform of online communication. For example, the communicative act of simply reposting lies in the sheer act of repost, which helps to create larger visibility for the same message. Our approach regarding communicative functions explores patterns of reposting, expressions of emotions and several other communicative acts (behavioral patterns of use) online. Conceptualizing our empirical results regarding frames and functions, what roles weibo play in the dynamics of the public sphere in China?
2. *Methodological questions.* Our study takes a quantitative approach with some qualitative examples to illustrate typical frames and functions of weibo posts. However, the political context of China, including the suppression of social unrest, poses serious challenges for social media research. To start with, widespread offline censorship often prevents the coverage and thus makes it hard to identify relevant cases of major environmental pollution and related social discontent in traditional media. However, the number of environment-related messages may be too large to identify relevant local cases online. What could be then meaningful yet technically possible ways of identifying relevant cases? Also, how could one build data sets and take samples from weibo services in China? How could the interpretation of findings take into consideration the presence of censorship, the lack of freedom of speech, and political authoritarianism? In short, what kind of specific research design and methods could be developed for empirical social media research in China in the tradition of contextualization of communication research (cf. Lee, 2011; Curran and Park, 2000)?

Methods

Case identification

In China, many cases of social unrest, including those that follow instances of major environmental pollution, are considered politically sensitive subjects. As a result, the coverage of such cases is often fully or partly censored, and consequently missing, in the

offline media in China. Also, weibo posts with environmental content may be too numerous and scattered for meaningful case selection. Therefore we decided to choose a third route for case identification: reviewing the international press. The reason that the case identification process had to start with international media coverage was to ensure maximum inclusion of relevant cases that took place within the given time frame.

We used the English language newspapers and news services in the database Factiva. We selected one of the potential subject filters (search criteria) on Factiva, "environmental news". The keywords used for the case identification were "assembly", "protest", "demonstration", "riot", "protester", "tear gas", "police", "violent", "clash" and "repress". The region of the environmental stories was limited to Mainland China. All articles containing "environment" and at least one of these keywords, either in the headline or in the content were included in the search results.

In this way, we identified 55 articles about 11 major environmental pollution and related unrest cases that took place between September 2009 and July, 2012 in China. (See Appendix 1 for the description of the cases, their social contexts and outcomes.) Our strategy might have missed cases that were not able to attract international journalists, e.g. happened in small villages in the countryside. These missing cases could be only targeted in a different research design (see the Conclusions).

Data collection and sampling

We collected weibo messages from the online database developed by the University of Hong Kong Weiboscope project (Fu, Chan, Chau, 2013). This project has been regularly sampling the timelines of more than 350,000 Chinese microbloggers who have at least 1,000 followers since January 2011. By searching the name of the place where these cases took place (i.e., Dalian, Haimen, or Qidong), a total of 76,993 weibo messages were collected for the seven out of the eleven cases identified from international coverage. For four cases identified from international coverage (Inner Mongolia, Tibet, Anhui and Shifang) weibos could not be retrieved from the Internet, which could be resulted from censorship.

Messages that carried the keyword (the name of the locality) but were irrelevant to environmental conflicts were excluded from the sample. Among the relevant posts, we identified the two most often reposted original weibo post (i.e., the two most popular original post) each case. Once the two most popular original posts in each case was identified, the whole (full) set of their reposts was collected by using Sina Weibo API for data analysis. From these full sets of reposts we took random samples, in total 1,639 messages (Table 1).

Cognitive framing and communicative functions

Cognitive *frames* imply interpretations in the communication of information and text – in our case, about the environmental incidents in the social media discussion. Frames exert influence over human consciousness by selecting some aspects of reality and make them salient; omit or lessen salience of other aspects (Entman, 1993). Even in a short weibo,

frames may promote particular problem definition (define problems), suggesting causal interpretation (diagnose causes), moral evaluation (make moral judgment and attribute responsibility) and recommend treatment (suggest remedies) (Entman, 1993).

Our categories and protocol for framing analysis were partly adapted from Semetko and Valkenburg (2000): 1) “Responsibility” frame: for messages blaming or expressing criticism; suggesting some actors have the ability, or should have done, differently to alleviate the problem; 2) “Human interest” frame: for messages that discuss how the incidents impact peoples’ own life (e.g., health) at the micro level; 3) “Conflict” frame: for messages that define the situation in terms of conflict of actors, or interests; 4) “Economic” frame: for messages with a major economic interpretation; 5) “Morality” frame: for messages making reference to moral or religious ethical behavior.

Using an inductive approach by encoding weibo samples, we identified seven additional frames to reflect our specific subject and unique study context. 6) The “Ecology” frame represents messages dominated by ecological perspectives; 7) “What’s next” denotes the posts characterized by a concern for or speculation over the future development of the issue; 8) “Purely informational” includes the messages sharing or requesting factual information; 9) “Personal” indicates weibos that are not related directly to the environmental incident in the original post. We also designed the protocol to reflect characteristics of weibo communication in the specific media and political context of China, hence introducing categories such as 10) “Censorship” and 11) “Propaganda”, for posts that reflect on the government’s media control and propaganda practices in the related environmental cases. Last, we added a category 12) “Uninterpretable/unclassified” for the messages with no substantial meaning (which is not uncommon in social media). In total, we defined protocols for these twelve categories for framing analysis. We coded each weibo post into only one category, by the major (most prominent), frame of each message.

The categories of *communicative functions* reflect the fact that social media revolutionized the ways of online communication. While framing analysis captures how environmental conflicts are discussed in social media, it does not reflect well enough the multiple ways weibo as a popular platform of communication is utilized in online public discussion of environmental conflicts, in particular the communicative purposes and functions of posting. For example, on weibo, a repost attached with no comments carries no frame in itself, but the meaning and value of the repost lies in the sheer communicative act of repost, which helps to create larger visibility for the message. The majority of users access weibo on smart phones and other mobile devices (e.g., on the bus or in the subway), so communicative functions with short reaction span, like forwarding, deserve attention as significant patterns of online behavior. In 2012, 72.2% of the Chinese Internet population used mobile devices to access the internet (CNNIC, 2012).

For these reasons, we developed another set of coding protocols for the communicative functions of weibo messages. Harlow (2011) developed five categories of communicative functions of social media posts. We regrouped those into three categories: 1)

“Information-oriented” messages: the main communicative function of the post is providing or asking for information; 2) “Stating opinions”: the main function is to express an opinion, judgement, or argument; 3) “Action/mobilization-oriented”: calling people to online or offline action to change the situation. In addition, we developed three new categories: 4) “Expressing emotions” (like support, discontent, hatred, etc.); 5) “Forwarding” the original post; 6) “Questioning credibility” was developed with an aim to reflect how much Chinese netizens are aware of or question the credibility of what is being spread on weibo. As long as a message questions the credibility of the information stated in the original post, it was classified into the “Questioning credibility” category. Each message was coded into one category, according to its major communicative function.

For detailed definitions of all frame and function categories, see Coding Protocol in Appendix 2.

Inter-coder reliability

After the coding protocol was developed, a pilot study was conducted to test inter-coder reliability. Representative samples were drawn from the collected posts. To balance sample disparity, we set different sampling proportions for each case, i.e. case with <100 samples: 100%; between 100 and 200: 50%; between 200 and 10,000: 10%; more than 10,000: 5%. Two native Chinese speaker coders were trained to familiarize with the coding protocol. Then, pilot coding were conducted on the pilot sample. If the inter-coder reliability was not satisfactory, the coders were debriefed for another attempt of pilot coding. This process was repeated until an acceptable inter-coder reliability rate was yielded. The final inter-coder reliability rates were calculated as .579 (95% CI 0.522-0.636, $p < 0.001$) for framing and .674 (95% CI 0.617-0.73, $p < 0.001$) for communicative functions.

Results and Discussion

Framing: “the state vs. the people” in environmental conflicts, and the responsibility of the government

Among all frames, “Conflict” (28.6%) and “Responsibility” (20%) are the most prevalent (see Table 2 for all framing results, with examples). This means that in the discussion of environmental discontent in China, most weibo users tend to interpret the situation as the clash of actors or interests, and point to the government’s misconduct. The most common type of messages in the “Responsibility” frame contains direct criticism of the government rather than responsible corporations. The government, especially the central government, is also often blamed for corruption, the lack of efforts in environmental legislation and its implementation, and ignoring citizens’ well-being by introducing polluting factories into or near human settlements. The combined 48.6% of “Conflict” and “Responsibility” frames presents a politicized and polarized interpretation of environmental incidents, in which the interpretation of the situation as “the state vs. the people” constitutes a bipolar worldview. Chinese companies are cognitively located on the government’s side in a

“government-industrial complex”, both because they are often state-owned, and the perceived lack of their environmental regulation (which also suggests the common interests of firms and the state). The common perception of the situation is the conflict between “the state vs. the people”, which can be seen in comments like “this [the victory of relocating the polluting industry] is a huge triumph of the Chinese people”.

In the “Conflict” frame, several messages tend to frame the situation as a conflict between economic development and citizens’ living standards and quality of life. It is noteworthy that the responsibility and conflict frames often overlap. For instance, comments that express the idea that “the government is too corrupted to recognize the conflict between economic development and people’s health” entail both frames. In the study, the coders were instructed to code messages according to the most prominent frame of a message (in this case, the responsibility frame). In fact, the overlap between the two frames reveals the fact that underlying the environmental conflicts in China are the deeper conflicts between people and the policies of the ruling party.

Correspondingly, the “Purely informational” (11.8%) and especially the “Ecology” (6.8%) frames do not feature prominently. This indicates that the “Conflict/Responsibility” (48%) joint frame (master frame) overshadows other interpretations, especially the ecological-environmentalist framing of the incidents despite the fact that their nature was originally environment-related.

Another finding that is worth mentioning is Chinese netizens’ attitudes towards censorship which is reflected in some posts on weibo. Among all messages analyzed in the study, a small portion (1.4%) is dedicated solely or mostly to the issue of online censorship in China. A typical message reads “I need to forward this message before it is removed so that more people can see it”. These posts reflect the fact that many Chinese netizens are aware of the censorship efforts by the government. They also show that Chinese weibo users regard the platform as an important source of information that is not available in the mainstream media and regard their forwarding behavior as a race with the censorship effort of the government. In some cases, authors mock censorship in a witty and humorous style. For example, one message reads “Oops, a slip of hand, I just forwarded this message”. Another example reads “I’d like to report that someone is still discussing this (forbidden) matter on weibo.” Besides witty taunting of censorship, netizens in China also actively circumvent censorship by using alternative forms to represent sensitive words. The most common example in the coded sample of this study is the word “government”, which in Chinese is referred to as “Zheng Fu”. In their criticism towards the government, many netizens used the initial letters of the word “ZF” to represent the meaning of government to reduce the chance of being censored.

Somewhat surprisingly, no message with a propaganda frame was found in the coded sample. This suggests that the work of paid post-writing propagandists (the famed “Fifty Cent Army” of the government) is not represented prominently in cases of environmental incidents in China.

If we compare the frame of the original post and the two most popular frames among the reposts, we find that in five of the seven cases the frame of the original post is identical with the two most popular repost frames. In other words, the frame of an original weibo post seems to influence the responses to it (Table 3). In more conceptual terms, the way the original post frames the issue may tend to set the framing pattern or “framing agenda” for the discussion around the original post. Further statistical exploration of this observation could help to analyze the nature of agenda setting on social networking sites.

Communicative functions: expressing opinions and emotions

The results of communicative functions analysis reflect the diverse uses of weibo in environmental conflicts (for all communicative functions results, see Table 4). In terms of communicative functions, the majority of netizens use weibo in two ways, to articulate “Opinions” (35.3%) or express “Emotions” (28.8%) to convey environmental grievances. These two types of popular uses realize different opportunities provided by the platform.

On the one hand, even though the 140-character limit of weibo posts may not allow for a complete and detailed argument, it is still easy for users to get their main ideas across. Such opinions are statements or judgments that entail a sense of rationality. In this sense the “Opinion” (35.3%) function, along with the “Information-oriented” (15.7%), “Action/mobilization” (8.2%) and “Credibility” (5.2%) function, realizes the potentials for open discussion on social media, and relates to the concept of the public sphere as the space for open-ended argumentation (Habermas [1962] 1989). These public sphere-related, argumentative communication functions together represent 64.4% of messages in environmental conflicts in China.

On the other hand, expressing emotions differ from arguments and opinion. The interpretation of the strong presence of “Emotions” (28.8%) may follow Yang (2009) who argues that mobilization in internet incidents depends on the expressive forms and content that may produce emotional responses among internet users. In this view, the occurrence of internet incidents in China is strongly related to emotional mobilization. For example, although a message that says “it is clear that the corrupted government is a part of this” and a message that says “I’m so angry with the government” both belong to the responsibility frame, but in terms of communication functions, the former represents an opinion and the latter expresses an immediate feeling that contributes to emotional mobilization.

Simply reposting the original post, i.e., “Forward” (6.8%) carries additional meaning in the context of Chinese media environment, where the dissemination of sensitive information is often hindered by state censorship and self-censorship by social media service providers. Because of the democratic and open nature of weibo, any user can contribute to the discussion by providing some of the missing information. One example is the Qidong case, in which thousands of citizens protested against planned drainage pipelines from a Japanese paper factory. One of the discussion topics on weibo about this case was whether the eucalyptus trees in southern China, allegedly planned by Japanese paper companies, are causing drought and destroying other plants. In the discussion, a number of users contributed

information by posting links to scientific articles on the ecological impact of eucalypti. In a similar way, forwarding emotional comments or emoticons amplifies anger and other feelings online.

In contrast, action-related messages are not very prevalent on weibo, as indicated by the low proportion of “Action/mobilization” (8.2%). Most messages that do serve the purpose of action are not aimed at mobilizing people to offline protests but rather concern changing personal and collective consumption habits. For example, these posts call on people to use less tissue and more handkerchiefs to help improving the environment. The most common type of action-related message calls for or relates to boycotting the companies for the pollution, e.g., “I never buy their products anymore.” These findings are in line with Ho (2001)’s observation that environmental activism in China tends to have an “unconfrontational” nature. Another reason could be that the more direct mobilization messages are censored on weibo (King et al, 2013).

Another point worth discussing is the credibility of posts on weibo. In fact, it is not uncommon to see rumors on Chinese social media. One example is the Xiamen PX protest, during which rumors exaggerating the adverse impact of toxic chemical paraxylene spread all over the Chinese internet, partly due to the lack of reliable information channel (Zheng, 2012). Building credibility also remains a challenge to traditional media where trust in media sources is often undermined by government propaganda. Out of all weibos coded, 5.2% expressed doubts towards the original posts (“Credibility”, 5.2%). In most cases, the authors simply ask “Is that real?” This suggests that many users look at information on weibo with a critical eye. They are aware of the fact that as a crowd-sourcing that tolerates a high degree of anonymity, it is easy for rumors to spread in a viral manner on weibo. Yang (2011) argues that the spread of online rumors in China reveals the intricate but changing dynamics between citizens and state authorities and that the interpretation of these rumors requires high sensitivity of the cultural and social context. For instance, in the Qidong example above, the accusations that the original post makes about tree planting by the Japan-based paper company and the netizens’ hostile responses are linked to the problematic historical legacy of China-Japan relations. This legacy became one of the reasons for much of the doubts casted on the credibility of the original post as to whether it is exaggerating the negative ecological impact of eucalypti to conform to the general sentiment towards Japan.

Conclusions

This study explores how weibo, one of the most important indigenous social media genres, was used in the discussion of seven major environmental incidents that took place between 2010 and 2012 in China. We found that the majority of Chinese netizens *frame* these events as conflicts between the state and the people, and rapid economic development and citizens’ well-being respectively, and attribute responsibility for the wrongdoing to the government. In the shadow of the combined 48.6% of conflict and responsibility frames and “the state vs. the people” master frame involved in them, ecological and all other frames remain less prevalent,

even marginal. Political interpretations override environmental framing (6.8%), despite the fact that the conflicts concerned environmental incidents. (Twenty-two percent of messages remain un-interpretable in terms of frames.) We do not find any sign of formation of a national green social movement: discontent with the government remains case-specific, localized, time-bound, and unrelated to other cases. Protest arguments target single issues in singular times in a “not-in-my-backyard” fashion. “The state vs. people” interpretation remains spontaneous and much less reflected than a “civil society against the state” type of strategic frame would be. The term “people” in these weibos usually means people impacted here and now in this particular case, or refer to a generalized national identity; it does not imply a purposeful, strategically acting, civil society.

In terms of *communicative functions*, weibo serves as an effective platform for multiple types of communication purposes. The majority of messages articulate rational communication, including critical opinions, requests for and sharing information, questioning the credibility of sources, and calling for action. These four functions with their overwhelming joint majority (64.4%) highlight the argumentative, public sphere side of weibo’s Janus-faced character. On the other side, emotional weibos (28.8%) express eruptive feelings of anger, distrust, loss of faith and other anti-government affections as well as nationalism. At the same time, we found little evidence for mobilization for action besides consumer boycott. The heavy presence of conflict and responsibility frames and anti-government feelings, together with a low level of mobilization, indicate high levels of social and political tension accumulated around the environmental incidents.

Despite of the tight state control of the internet, a variety of large-scale communicative activism, including political expression, can be found on weibo. In this sense, weibo provides a space for creating critical discourses that can be accessed and contributed to at any time. Such visibility itself and the sense of community and encouragement it creates can be viewed as a democratizing force in the public sphere in China. Keeping the official taboos on sensitive topics is gradually and permanently challenged by the dynamics of rational, argumentative, open-ended communication. Censorship may keep taboos, but these are becoming like well-defined, visible islands, surrounded by a flood of bottom-up communication. However, censorship remains a major obstacle to the spread of sensitive information on weibo, especially in terms of mobilization. We therefore argue that the optimism towards the democratizing potentials of social media in China is supported by empirical evidence, but should be upheld with caution given the complex media landscape of the country. At the same time, netizens are highly aware of censorship and actively and creatively seek ways to circumvent it.

Censorship of traditional and online media also poses challenges for empirical social media research in China. We developed a specific research design that helps to conduct empirical research in this highly censored media environment. Elements of such Sinification of social media research methodology include case selection from the international press to circumvent domestic media censorship; the development and use of Weiboscope as an autonomous, original database of weibo messages; and including censorship itself among the content

analysis categories as netizens often discuss it despite a different original subject.

Our findings also have to be qualified in the context of censorship. Although we attempted to collect pre-censored data from weibo, messages regarding four of the eleven major environmental incidents identified by the international press could not be retrieved, because they had been removed before the posts were downloaded to our database. Therefore, discussion of results cannot be automatically generalized to “weibo communication about local environmental conflicts”, but have to be qualified as “officially tolerated weibo communication about local environmental conflicts” or “non-censored weibo communication in local environmental conflicts”. At the same time, if we want to explore and interpret weibo’s impact on online public opinion, the presently analyzed data is exactly relevant. In fact, in terms of critical and sensitive content, our findings under-evaluate their presence as a certain part of such posts had been removed by censors so they were not included in the database.

Also, numerous smaller environmental incidents (especially in the Chinese countryside) were not included among the cases in the study as they could not attract foreign media attention. Future investigations on social media discussion about environmental conflicts in China could seek to combat this limitation by starting with lists of environmental incidents obtained from other sources in the field such as environmental NGOs.

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References

- Bristow, M. (2010). *China Defends Internet Censorship*. Retrieved March 18, 2012 from <http://news.bbc.co.uk/2/hi/8727647.stm>
- Calhoun, C. and Yang, G. (2007). Media, civil society, and the rise of a green public sphere. *China Information*, 21, pp.211–36.
- Cannici Jr. W. (2009). The global online freedom act: combating American businesses that facilitate internet censorship in China. *Journal of Internet Law*, 12 (11), pp. 3-17.
- Chen S., Zhang H, Lin M, Lv S. (2011). Comparison of microblogging service between Sina Weibo and Twitter. In: Computer Science and Network Technology (ICCSNT), 2011 International Conference: 2259-63. IEEE, 2011.
- Chiu C., Lin D., and Silverman A. (2012). *China’s social-media boom*. McKinsey and Co. Retrieved on February 18, 2013 from

<http://www.mckinseychina.com/wp-content/uploads/2012/04/McKinsey-Chinas-Social-Media-Boom.pdf>

CNNIC (2012). *Zhong Guo Wang Luo Fa Zhan Zhuang Kuang Tong Ji Bao Gao*. [Report on Internet Development in China].

Curran, J. and Park, MJ. (2000.) *De-Westernizing Media Studies*. London; New York: Routledge.

Entman, R.M. (1993). Framing: Towards Clarification of a Fractured Paradigm. *Journal of Communication* 43 (4), 51-58.

Fu KW, Chan CH, Chau M. 2013. Assessing Censorship on Microblogs in China: Discriminatory Keyword Analysis and the Real-Name Registration Policy. *Internet Computing, IEEE*. 2013; 17(3): 42-50.

Habermas, J. ([1962] 1989). *The structural transformation of the public sphere*. Cambridge, MA: MIT Press.

Harlow, S. (2011). Facebook and an online Guatemalan justice movement that moved offline. *New Media and Society*, Vol. 14, No. 2, pp. 225-243.

Harp, D., Backmann, I., & Guo, L. (2012). The whole online world is watching: profiling social networking sites and activists in China, Latin America, and the United States. *International Journal of Communication* 6(2012), 298-321.

Hess, S. (2011). Environmental Protest and the Greening of the State: A Comparison of the Pre-transition Poland and Contemporary China. *Problems of Post-communism*. Vol. 58, No. 2, pp. 45-57.

Ho, P. (2001). Greening without Conflict? Environmentalism, Green NGOs and Civil Society in China, *Development and Change*, 32, pp. 893-921.

Howard, P. N. and Jones, S. (2004). *Society Online: The Internet in Context*. Thousand Oaks: SAGE.

Huang, P. (1993). Public sphere/civil society in China? The third realm between state and society. *Modern China*, 19(2), 216-240.

Jiang, M. (2010). Authoritarian deliberation on Chinese Internet. *Electronic Journal of Communication*, 20 (3/4).

Lagerkvist, J. (2010). *After the internet, before democracy: Competing norms in Chinese media and society*. Bern: Peter Lang.

- King, G., Pan, J., and Roberts, M. E. 2013. How Censorship in China Allows Government Criticism but Silences Collective Expression. *American Political Science Review* 107, no. 2 (May): 1-18.
- Lee, P. S. N. (2011.) De-Westernizing communication studies in Chinese societies? In: Wang, G. (ed). *De-Westernizing Communication Research. Altering Questions and Changing Frameworks*. London, New York: Routledge, 79-92
- Liu, J. and Diamond, J. (2008). Revolutionizing China's Environmental Protection. *Science* 4 January 2008: 319 (5859), 37-38.
- Ma, X.N. (2010). *Zhong Guo weibo Jia Zhi Yu Fa Zhan Yan Jiu* [Study on value and development of micro-blogging of China]. Master's thesis. Nan Chang University.
- MacKinnon, R. (2010). *Testimony before the US-China Economic and Security Review Commission: China's Information Control Practices and the Implications for the United States*. Retrieved on March 18, 2012 from http://rconversation.blogs.com/files/rm_uscc_final.pdf
- MacKinnon, R. (2011). *Testimony of Rebecca MacKinnon to the House Subcommittee on Africa, Global Health, and Human Rights "Promoting Global Internet Freedom"*. New America Foundation. Retrieved from: http://newamerica.net/publications/resources/2011/testimony_of_rebecca_mackinnon_to_the_house_subcommittee_on_africa_globa
- Pickerill, J. (2003). *Cyberprotest: environmental activism online*. Manchester, England ; New York : Manchester University Press.
- Pickerill, J. (2001a). Weaving a Green Web: Environmental protest and computer-mediated communication in Britain. Webster, F. (Eds.), *Culture and politics in the information age: A new politics?* London: Routledge.
- Pickerill, J. (2001b). Environmental Internet Activism in Britain. *Peace Review* 13(3), pp. 356-370.
- Salter, L. (2003). Democracy, new social movements, and the internet: A Habermasian analysis. In McCaughey, M. and Ayers, M.D. (Eds.), *Cyberactivism: Online Activism in Theory and Practice*. New York ; London : Routledge.
- Shao, G., Lu, J., and Wu, J. (2012). New Media and Civic Engagement in China: The Case of the Xiamen PX Event. *China Media Research*. 8(2): 76-82.
- Semetko, H. A., and Valkenburg, P. M. (2000). Framing European politics: A content analysis of press and television news. *Journal of Communication*, 50(2), 93-109.
- Tsui, L. (2001). Internet in China: Big mama is watching you. MA Thesis.

- Chinese Languages and Cultures, University of Leiden. Retrieved on November 11, 2012 from: <http://www.lokman.nu/thesis/010717-thesis.pdf>
- Wakeman, F. (1993). The civil society and public sphere debate: Western reflections on Chinese political culture. *Modern China*, 19(2), 109-138.
- Xie, L. (2009). *Environmental Activism in China*. London; New York: Routledge.
- Yang, G. (2003). Weaving a Green Web: The Internet and Environmental Activism in China. *China Environment Series 6*, pp. 89-93.
- Yang, G. (2005). Environmental NGOs and Institutional Dynamics in China. *The China Quarterly*. Volume 181, March 2005, pp. 46-66.
- Yang, G. (2009). Of Sympathy and Play: Emotional Mobilization in Online Collective Action. *The Chinese Journal of Communication and Society* 9: 39–66.
- Yang, G. (2011). Technology and its contents: issues in the study of the Chinese Internet. *The Journal of Asian Studies*, Vol.70, No.4 (November) 2011: 1041-1050.
- Yang, X.B. and You, T.Y. (2012). *Ai Rui Zi Xun: 2012 Nian Q2 She Jiao Fu Wu Fu Gai Ren Shu Chao Guo Si Yi Weibo Fu Wu Cheng Wei Zhu Li* [Airui consulting: social media users reach 4 billion in the second quarter of 2012, weibo service becoming mainstream]. Retrieved from <http://web2.iresearch.cn/friendship/20120727/177753.shtml>
- Yang, K. C.C. (2011). The aborted Green dam-youth escort censor-ware project in China: A case study of emerging civic participation in China's internet policy-making process. *Telematics and Informatics*, Vol. 28, Issue 2, pp. 101-111.
- Yu, L., Asur, S., Huberman, B.A, (2011). What trends in Chinese social media. *Proceedings of the 5th Workshop on Social Network Mining and Analysis at the 17th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*, 2011. Arxiv preprint arXiv:11073522.
- Zeng, F.X. (2009). Dang Dai Zhong Guo Huan Jing Yun Dong Zhong De Mei Ti Jue Se: Cong Zhong Hua Huan Bao Shi Ji Xing Dao Xia Men PX. [The role of contemporary media in environmental movements in China: from Centurial Tour of Chinese Environmental Protection to Xiamen PX.] *Xian Dai Guang Gao [Modern Advertising]*. 171: pp. 36-41
- Zheng, Y. (2012). Wang Min De Zi You Yu Bian Jie—Guan Yu Weibo Gong Gong Ling Yu Zhong Yan Lun Zi You De Fan Si [The freedom and boundaries for netizens—On freedom of speech on weibo in the public sphere]. *She Hui Ke Xue Yu Yan Jiu [Social Science and Research]*. 2012.1.
- Zittrain, J. and Edelman, B. (2003). *Empirical Analysis of Internet Filtering in China*.

Retrieved 18 March, 2012 from <http://cyber.law.harvard.edu/filtering/china/>

Tables

Table 1: Summary of samples

Case	Sample size	Percentage in the sample
1. Haining	73	4.4%
2. Haimen	309	18.8%
3. Dalian	64	3.9%
4. Jiaoyang	143	8.7%
5. Yinggehai	107	6.5%
6. Jingxi	24	1.5%
7. Qidong	919	56%
Total	1639	

Table 2: Framing results, with examples

Frame	%	Example
Conflict	28.6	“There is going to be a prairie fire” ¹ [The conflict between people and the state] “Unlimited commercial exploitation is bound to cause irreversible ecological damage” [The conflict between two issues]
Responsibility	20.0	“The government must take the primary responsibility!” “[The governors] are trading for money and promotions with the well-being of the people.”
Purely informational	11.8	“Asking for the truth”
Ecology	6.8	“I remember that eucalyptus is originated from Australia. I don’t think it has such a strong negative impact to the ecology as alleged [in the original post]. But I do think single cropping of eucalyptus could upset the balance of local ecological system. Want more information on this @ Guoke Wang ² .”
Human interest	3.2	“Poor citizens in Dalian”
Personal and unrelated	2.1	“Yinggehai, a beautiful name, I knew since I was young that the place is abundant in sea salt. I still store sea salt at home these days. I drink salt water when I have a sour throat. It works very well.”
What’s next	1.7	“Concerned!” “Let’s just see what happens”
Censorship	1.4	“I need to forward this message before it is removed so that more people can see it.”
Morality	1.3	“Ignoring the future generations for a little money and a position. Where is justice? Where is the conscience?”
Economic	1.1	“Be cautious of Japan’s economic imperialism”
Uninterpretable/ Unclassified	22.0	“Forwarding” “I’m so sad that my hometown is on the list [of places being affected]”
Propaganda	0.0	N/A
Total	100.0	

¹ The message makes use of Mao’s famous quotation “A single spark can start a prairie fire”, which was used to refute the pessimistic views existing in the Party when the Communist Party fought to take over China. In recent times, the quotation is commonly used to describe a sense of confidence in a seemingly weak force to combat strong enemies.

² The Weibo account of Guokr.com, a website that specializes in providing science-related knowledge and information.

Table 3: Comparison of the most numerous frames of original posts and their reposts

Case	Most numerous frame of original posts	Most numerous frames of reposts
Qidong	Conflict	Responsibility; Conflict
Haimen	Conflict	Conflict; Uninterpretable
Jiaoyang	Human interest	Human interest; Uninterpretable
Yinggehai	Conflict	Conflict; Uninterpretable
Haining	Conflict	Responsibility; Uninterpretable
Dalian	Purely informational	Responsibility; Uninterpretable
Jingxi	Ecology	Conflict; Ecology

Table 4: Communicative functions results, with examples

Function	Proportion (%)	Example
Opinions	35.3	“What’s the use of economic development without caring about people’s health!”
Emotions	28.8	“So sad for China!”
Info-oriented	15.7	“Can I ask for some explanations from environmental protection specialists?” [Asking for information] “For those who are concerned, you can read this article about foreign companies planting eucalyptus in China [Contributing information]
Action/mobilization	8.2	“I think we should use less tissue paper and switch back to handkerchiefs” “Boycott products from Oji Paper Company!”
Forwarding	6.8	“Forwarding”
Credibility	5.2	“Is the news reliable?” “I think the weibo message contains over-exaggerated information. I’ve already reported it.”
Total	100.0	

Appendices

Appendix 1 : Summary of environmental incidents

Date	Case	Description	Social context	Outcome
1. July 28, 2012	Qidong protest against paper factory	Thousands of demonstrators in Qidong, a coastal city near Shanghai, protested against alleged pollution from a paper factory that belongs to a Japanese paper company. The protestors overturned cars and mini bus and beat up at least two police officers.	Demonstrators seized bottles of liquor and wine and other items that Chinese officials frequently receive as bribes from the local government offices.	The city mayor said in a statement that the planned pipeline that would have drained water from the factory would be cancelled.
2. July 2, 2012	Shifang copper protest	Local residents protested against plan to build copper factory. The protest turned into violent clashes with the police.		Municipal government agreed to temporarily suspend the construction of the factory.
3. April 12, 2012	Yinggehai protest against coal plant	Thousands of villagers in Yinggehai, a small fishing town in Hainan Province, surrounded the government building to protest against a coal-fire plant they say are endangering the fishing business. Villagers were injured in the police crackdown.		No government officials came out to meet the villagers. The protestors ended up storming the government buildings. Residents in big cities in Hainan were warned not to support the protest. Police set up checkpoints after the protest.
4. December 20, 2011	Haimen protest against the expansion of a power plant	Around 2000 local residents in Haimen, Fujian Province blocked a highway to protest against a coal-fired power plant, saying that it is behind the increase of the number of cancer patients. TV in Hong Kong showed police firing gas canisters towards the crowd. Residents say a 15-year-old boy and a woman was killed. Xinhua denied this information.	Haimen is a fishing town. The power plant is owned by state-run Huaneng Power. The protest followed months of labor unrest because of the slowing down of the manufacturing industry in Guangdong. Protest in nearby village Wukan has previously attracted worldwide media attention. The protest is a challenge for Guangdong Party Chief Wang Yang, a contender for promotion to the highest echelons of the Communist Party in a leadership transition in late 2012.	State-run television broadcasted a message from Shantou Party officials, promising temporary suspension of the expansion plan.

5. September 17, 2011	Haining protest against US-listed solar panel plant	More than 500 residents in Haining, Zhejiang protested for three days against a plant making solar panels for discharging toxins into a river. Riot police cracked down the protest with violence. Protestors also smashed the window of the factory and police vehicles.	The protest was spurred by a rising environment protest online.	The project was suspended.
6. August 14, 2011	Dalian PX protest	12,000 protestors took it to the street in Dalian against Fujia Chemical Plant, which produces paraxylene (PX). Xinhua said there was no injury.	The incident was spurred by the damage of a dyke at the perimeter of the plant. Citizens protested on the fear that there would be leakage of toxins.	Authorities agreed to shut down and relocate the chemical plant. On August 15, 2011, Reuters reported that the factory kept on running despite the shutdown order.
7. June 25, 2011	Protest in Inner Mongolia	Mongol students and traditional herders in Inner Mongolia marched to a lead mine that they say are discharging toxic waste into the local environment. About 50 riot police moved in, beat and took away many protesters. China accused "foreign forces" of trying to fuel the protest.	The incident started after a Mongolian herder was killed by a coal truck driven by a member of China's dominant Han ethnic group as a group of herders sought to block a convoy from crossing pastureland. The Chinese government was thought to be anxious to ensure that the unrest did not escalate in the same way that anti-Chinese protests did in Tibet in 2008.	The fate of the taken away ones was unknown. Government and police officials refused to comment on the incident.
8. July 28, 2010	Anhui unrest over landfill	Thousands of villagers in Shucheng, Anhui clashed with the police in a protest against the government's plan to build a garbage processing plant on the upper reaches of a river that provides their drinking water.		The county government said the project had been suspended permanently.
9. July 15, 2010	Jingxi County riot	More than 1000 villagers at Jingxi, Guangxi Province, protested over poisoned water caused by an aluminum plant.		The riot was quieted down.
10. May, 19, 2010	Tibetan villagers protest in Madang	Villagers in Tibet protested against pollution problems they say caused by a nearby cement factory. The protestors clashed with the police causing several injuries.		Formatted: Bullets and Numbering to the hospital after the police fired at the villagers.
11. 11.	Jiaoyang,	Hundreds of Villagers in Jiaoyang, a		Formatted: Bullets and Numbering

September 17, 2009	Fujian, protest against lead poisoning	township in Fujian Province protested against suspected lead poisoning caused by a local battery factory.		ordered the environmental protection bureau to increase supervision on the plant. The factory was ordered to shut down.
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Appendix 2

Coding Protocols

**Framing and functions of media content
on Sina Weibo**

Date-Month-Year

Framing

1. Responsibility frame

The media content blames or expresses criticism towards the misbehavior of a single party or several parties, or suggests that one or more parties have the ability or should have done differently to alleviate the problem.

2. Human interest frame

The media content expresses concerns about the individuals and groups affected by the issue/problem or talking about how the incidents affect people's lives at a micro scale (e.g. how it impacts a person's health). It could employ adjectives or personal vignettes that generate feelings of outrage, empathy, caring, sympathy or compassion, or going into the private or personal lives of the actors (e.g. by quoting local residents in the story).

3. Conflict Frame

The media content defines the situation as a conflict by referring the parties involved

as winners and losers (e.g. people vs. the government/the company) by using words such as “bowed to...”, or talking about conflicting statements/disagreements among different parties, or talking about two or more than two sides of the problem or issue, or two conflicting interests in the issue (e.g. money vs. human health), or showing support to one party in the conflict, or making reference to conflicts happened in the past, or calling for actions from people. Action-related messages that offer support to people participating in the conflict also belong to this category.

4. Economic frame

The media content addresses the situation from economic points of view by talking about the economical impact of a project, or the financial losses or gains in the future, or the costs/degree of expense involved, or the economic consequences of pursuing or not pursuing a course of action. Messages that support or object the construction of a project with potential to pollute also belong to this category if the message makes the argument based on economic concerns.

5. Ecology frame

The media content addresses the situation from environmental points of view by mentioning the contemporary environmental or ecological consequences of the problem or talking about the environmental or ecological impacts of the problem on the future, or expressing concerns about the ecology in the future.

6. Morality frame

The media content makes reference to morality (e.g. by using the word “conscience”), God, and other religious tenets or offer specific prescriptions about how to behave out of considerations of future generations.

7. “What’s next” frame

The media content shows concerns for the future development of **the issue itself** by asking for more information or by simply asking “what’s next”. Note that messages that post question about the future could also incorporate other frames. For example, the message could be concerned about the future development of the economic consequences (economic frame) or the future generations’ well-being (morality frame) after the environmental pollution. In that case, the message should be coded into other relevant categories.

8. Censorship frame

The focus of the media content is censorship. The message could employ sarcastic comments on how certain media content is censored in different media outlets or how the government makes efforts to conceal certain facts from the public.

9. Propaganda frame

The media content can be easily discerned as a propaganda piece, which is defined by an obvious agenda of praising the government. For example, the media content could talk about the merits of the governments' performances in the environmental incident without backing up the argument with convincing rationales.

10. Personal frame

The media content is characterized by a personal angle. In some cases, the message could be entirely unrelated to the subject matter of environmental activism. For instance, the message could express personal attachment to a place where an environmental incident happened or the subject of the message could be swayed to an entirely irrelevant matter by the author or interaction with the previous re-poster regarding another issue. All messages that belong to this category should be related to the issue, if the message is personal and NOT relevant, it should be put into category 12 instead.

11. Purely informational frame

The message only contributes more information to the discussion or asking for more information. The frame should enjoy lower priority than the others above, that is, an informational message should be first interpreted according to any possible frame it carries. Only the ones that do not bear any detectable frame belong to this category.

12. Uninterpretable/unclassified

The message can not be properly interpreted within the context or can not be classified into one of the above categories. Emoticons, weibo messages that says "forwarding", purely emotional expressions that do not carry a detectable frame and messages that simply do not make sense to the coders belong to this category. The category should be given the least priority among all the frames.

Communicative functions

1. Information-oriented

The function of the message is information-related, which could be asking for information/clarification or contributing more information to the discussion

2. Stating opinions

The message conveys the poster's opinion on the issue with the indication of rationality and reasoning behind it. The message should basically express an idea instead of pure emotions. It could be a judgement (e.g. "I think this is just another attempt of the government to fool the citizens") or an argument (e.g. "Similar case happened in XX

ended up like this, so I think this one will be pretty much the same”).

3. Expressing emotions

The message expresses the poster’s emotions, such as offering general support, expressing discontent or hatred, or emoticons.

4. Action/mobilization-oriented

The message aims at mobilizing people into online or offline actions with the purpose of changing the situation.

5. Questioning credibility

The message questions the credibility of the original post or simply points out that the post is a rumor. It can also cast doubts on the original message by providing alternative information. The category enjoys more priority than other categories. As long as a message doubts the credibility of the original post, either the source of the information or the content, the message should be classified into this category but not the others.

6. Forwarding

The message mainly reflects the poster’s effort to repost. Messages tagging other users while forwarding or messages only attached with a emoticon also belong to this category. If a message says “forwarding” but is also attached with the poster’s comments, then the main functionality of the message should be coded according to comments. Messages that only reflect the author’s ramble and messages that can not be classified into any of the previous category also belong to this category.

Other guidelines for coding:

- If a message contains more than one frame, which typically happens with longer posts, take the most prevalent frame that appears in the message.
- Oftentimes the reposts need to be interpreted within a context. In that case, the coder needs to look at the previous message or the original post for interpretation. However, no assumptions should be made about the author’s intended meaning in the coding process.
- If a message mixes more than one communicative function, take the most prevalent function.