

EMERGING POWERS OF INFLUENCE:
THE RISE OF NEW MEDIA IN CHINA

By

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To my dear parents and beloved homeland—China

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Abstract of Dissertation Presented to the Graduate School
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China is one of the fastest growing Internet markets in the world. The Internet has been changing people's lives and revolutionizing the media landscape in China. New media platforms online, such as blogs and public forums, have been built up and adopted by millions of people. Exposure to new technology and devices has made computers, Internet, and mobile phones indispensable parts of life for many people, especially young people, in China. Compared with traditional media such as newspapers, radio and television, the Internet and Internet-related new media platforms bring a fairly different media experiences to Chinese people, creating new channels for people to get information and enabling them to express, organize, and influence public opinion in unprecedented ways. By watching, reading, and talking to each other, Chinese Internet users generate collective intelligence and build public discourse that is different from the traditional media discourse initiated by the government. This new phenomenon in China's online sphere could usher in a new era of public engagement and a more transparent and democratic society.

Based on the agenda-setting theory and the concepts of new media and citizen journalism, this study investigated the emerging aspects of new media and citizen journalism in China from an agenda-building perspective, examining the theoretical significance and practical implications of new media and citizen journalism in China. Specifically, this study focused on how Internet users have been using online public forums and blogs to express and exchange their opinions during a public health crisis—the tainted milk formula scandals—exploring the ways in which citizen journalism and new media manifested themselves at a time period full of uncertainty and public tension.

To better understand the roles and characteristics of new media in the Chinese society, this content analysis of newspaper, online forum, and blog coverage of the tainted milk formula scandals examined the differences between the old and new media platforms, analyzing the discrepancies between public discourse from new media and government discourse from traditional mainstream media. Further, by examining the inter-media agenda-setting effects between new media and traditional mainstream media, the study investigated how citizen media and traditional mainstream media may influence each other in the ways they covered the public health crisis. The theoretical and practical implications of the findings are discussed.

CHAPTER 1 INTRODUCTION

The rapid growth of the Internet has changed the media landscape in China by bringing in multiple new media platforms such as blogs, public forums, and micro-blogs. Unlike traditional media in China, new media platforms allow people to express their opinions and hear from others more easily and freely. The rise of citizen engagement in information production and dissemination creates a new realm for grassroots public discourse, providing broader implications for the flow of free information in China's controlled media environment.

The tainted milk formula scandals from 2008 to 2011, constituted a public health crisis that attracted attention from all over the world and was widely covered and discussed in all Chinese media platforms including mainstream newspapers, blogs and online forums. This case provides a good opportunity to look at the growing influence of new media in China. By examining the differences and correlations between the public discourse generated by new media and the government discourse shown in mainstream newspapers, the findings will shed light on how the media landscape is changing, especially in the development of new media and citizen journalism, in mainland China.

Media in China

The past three decades have witnessed tremendous social, political, cultural and underlying ideological changes in the People's Republic of China, also referred to as mainland China (Feng & Wu, 2009). Since the late 1970s, the country has been more open to the outside world, putting the priority on economic reforms. The policy changes have led to a transition from a command

economy, in which government was the leading economic power, to a market-oriented economy with an emphasis on a free market or laissez-faire policy. The market orientation, accompanied by political decentralization with more local autonomy, has prompted the emergence of a civil society and an incremental democratization in China (Huang & Chen, 2009; Yu, 2002). The economic and political reforms have also contributed to changes in the external and internal environment of Chinese media.

In the 1980s, the Chinese Communist Party (CCP) decided to allow newspapers, magazines, television, and radio stations (except major party newspapers and party-affiliated magazines, TV and radio) to be commercialized and dependent on advertising revenues instead of being financed exclusively by the government (Press Reference, 2010). This requires and enables media in mainland China to transform from traditionally government-owned businesses into relatively independent market entities, although all of the news media are still owned by the state. Print media, including newspapers and magazines, are still under the regulations of the General Administration of Press and Publication of the People's Republic of China. Moreover, the change of policies on media industries in China created a fundamental change in audiences and the advertising market. Mainstream media, including newspapers, have been driven to attract more readers and advertisers. Less strictly controlled by the government than party newspapers, metro newspapers have begun to pay more attention in their news reporting to what average citizens rather than government authorities are interested in (Huang & Chen, 2009; Yu, 2002). In addition,

challenged by the rapid development of new information technology, Chinese media have started the process of digitalization. For example, more and more newspapers began to set up newspaper websites, to utilize the Internet for source finding, interviews, internal information sharing, copy editing, etc.

The development of the Internet in China has been rapid with a dramatic expansion in the number of Internet users. Internet-based media, such as blogs, online forums, social networking sites, and micro-blogging, being the driving force for the development of citizen media in China, have become more and more popular among Chinese Internet users (CNNIC, 2010). Traditional media have been paying more attention to online citizen media and the voices from the public, citing more user-generated content. Government authorities have begun to feel the impact of the emerging citizen media.

During the tainted milk formula scandals, more information and opinions about the scandals were released online by the public. In response, government authorities had to provide answers/solutions to the questions or criticism from citizens. This path of information flow is revolutionary. Previously in China, with only the existence of traditional newspapers, radio and television, information flowed from the government through mainstream media to the public. There was limited control of information by the public. However, with the help of new media like public forums and blogs, informed people can get their voices out and find people who agree or disagree with them. For the first time, a public sphere independent of the government has emerged. Civic conversations in the society are facilitated. Information can flow from the public through new media to

mainstream media organizations and the government, enabling two-way communication instead of the government-dictating communication. As a result, Chinese citizens may now have some influence on policy-making, forcing the government to respond to social problems exposed online and take actions. In other words, such contra-flow of information from people to the government could improve the transparency of the society and speed up the development of democracy in mainland China (Chang, 2008; Yang, 2003). As the online landscape continues to evolve and mature, not only journalism practice but also the public sphere in China is gradually evolving into a new era. New media have facilitated more voices and have given citizens more power in the society (Gillmor, 2004). The existence of the new digital platforms has made it possible for the appearance of a Chinese public sphere. Further growth of influence is on the horizon.

Tainted Milk Formula Scandals

Food safety is now a growing public health concern around the world. In China, a series of food safety incidents during the first decade of the 21st century killed many Chinese citizens and degraded the international image of the country (Chan & Lai, 2009; Xu, 2009) (Table 1-1). Among all of the food safety scandals, the tainted milk formula scandals probably received the most attention worldwide. In 2008, melamine, a nitrogen-rich industrial chemical used in plastics and fertilizers and banned in food production, was found in the Sanlu infant formula during an inspection by the government after media exposure of the potential problem. The inspection showed that many Chinese dairy companies put melamine in their products to thicken the watered-down milk and boost the

apparent protein content to fool standard tests, cutting production cost and thus increasing their profits (Chan & Lai, 2009; Jacob, 2008; Liu, 2010). Infants who drink such melamine-contaminated formula for sustained periods could develop kidney stones and suffer from kidney failure (Zhao & Lim, 2008).

Table 1-1. Major food safety incidents in China during the first decade of the 21st century

Year	Food Safety Incidents in China
2003	Poisonous ham. Pesticide Dichlorvos was used by some producers in Jinhua ham production to prevent spoilage and insect infestation.
2004	Counterfeit baby formula. Around 70 babies died of malnourishment. More than 100 other babies in Anhui Province suffered from malnutrition; Counterfeit alcoholic drinks. Industrial alcohol was blended with rice wine in alcoholic drinks. 4 men died of alcohol poisoning and 8 other men were hospitalized;
2005	Sudan I Red Dye, a chemical banned from food manufacturing in China since 1996, was found to be illegally added by some food companies; Excess iodine in Nestle milk powder, which may lead to pathological changes of the thyroid gland; Hygiene problem with Haagen-Dazs products in several provinces.
2006	Pesticide residue on vegetables; Use of prohibited chemicals (i.e. carcinogenic nitrofurans metabolites) and drugs (i.e. malachite green) in fishery; Counterfeit drugs (i.e. fake Armilarisni A). Disinfectant, the chemical diglycol, etc. were found in several drugs.
2007	Alleged carcinogen (oil filtering powder, magnesium trisilicate) used in frying oil for KFC products; Melamine-contaminated wheat gluten and rice protein in pet food for export.
2008	Infant milk powder formula tainted by melamine. Over 50,000 children were affected.
2009	Illegal reuse of material from the 2008 adulterations in dairy products; Leather protein was found being used in milk supplies including milk powder and other processed dairy products.
2010	Shengyuan milk formula was suspected for causing child precocious puberty
2011	Melamine was found again in some brands of infant formula products

Later in 2009 and 2010, materials from the 2008 adulterations were found being reused illegally in dairy products. Moreover, in 2009, some dairy products,

including milk, milk formula, etc., were found to have been polluted by a carcinogenic protein derived from leather. Later in 2010, after drinking Shengyuan milk formula, many children began to develop symptoms of precocious puberty such as breast development and high levels of estrogen. It was suspected that Shengyuan formula was the cause of the problem, although the companies denied responsibility. Earlier in 2011, melamine was found again in some infant formula products in a nationwide investigation initialized by the government.

Media, especially new media, played an important role in revealing these threats to public health. On May 20, 2008, a Chinese citizen, Yuanping Wang, posted on Tianya.cn (a popular online forum and probably China's biggest online public forum without attachment to any major news agency) that his daughter's urine had become turbid with granules because she had been drinking the Sanlu infant formula (Chang, 2008). He made a plea for public attention regarding the tainted formula. There were more than 3,000 responses to Wang's original post. From that time, the public, especially Internet users, began to pay attention to the incident.

The story did not appear in traditional media until September 11, 2008, when the *Oriental Morning Post* reported that Sanlu formulas—one of China's oldest and most popular infant formula—was the cause of kidney stones for many infants around the country (Chang, 2008). Many newspapers, local and national, then started to follow up (Chang, 2008; Xin, 2010). At the same time, a nationwide investigation by the central government revealed a link between the

unusual outbreak of kidney stones among babies and infant formula from Sanlu (Liu, 2010).

After that, the tainted Sanlu formula incident quickly unfolded to be a nationwide scandal and yet another international embarrassment. What made people even angrier was that the later nationwide inspections found that most dairy companies had the same problem—illegally adding melamine to their formulas (Zhao & Lim, 2008). According to the Xinhua news agency, the biggest and most authoritative news agency in China, contaminated formula had caused at least six infant deaths, and nearly 300,000 children had been sickened after consuming contaminated formula by December 2008 (Jacob, 2008).

After the initial exposure of the health threat, citizen journalists and Internet users started reporting and discussing the formula scandals more widely (Xin, 2010). Mobilized Chinese Internet users tried to search online for more details, relentlessly exposing those who were involved in the scandals (Chang, 2008). For example, some found that China's Central Television (CCTV), the most authoritative TV station in China, had broadcast a program praising Sanlu's quality control process on September 2, 2008. Although the video was quickly deleted from the TV website's archive after the scandals, some people found the program's script and posted it online, questioning the credibility of the media (Chang, 2008). Outraged people studied the website of the General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ), China's major quality control bureau and watchdog organization on product safety issues, finding posts from parents complaining about Sanlu's infant

formula as early as June 30, 2008 (Chang, 2008; Ma, 2008). Most complaints from parents were ignored, as Sanlu had been exempted from quality inspections by the AQSIQ until the exposure of the scandals in September (Chang, 2008).

The 2008 Sanlu tainted formula scandal and the following tainted formula incidents (such as the reuse of materials from the 2008 adulterations in dairy products, Shengyuan estrogen-contaminated milk formula, the leather-polluted milk and the melamine-tainted infant formula in 2009, 2010, and 2011; see Table 1-1), resulted in people's loss of trust in dairy products made in China. Millions of Chinese Internet users posted on online discussion forums and blogs to blame the dairy companies, criticizing the government for lax supervision. The Internet users' consistent efforts influenced the resignation of Changjiang Li, the head of the AQSIQ, forcing the government to set up new regulations for dairy products (Chang, 2008; Ma, 2008).

Need for Current Study

To some extent, Chinese Internet users' prompt and in-depth investigation into the formula scandals overshadowed the work of many journalists from traditional media (Chang, 2008). Online forums and blogs have become freer places for Chinese people to voice their anger, lodge complaints and expose problems, especially regarding public crises such as the milk formula scandals. In other words, new media provide important platforms for public participation in civic life in China. People can perform a watchdog role when the press fails to do so. Citizen journalism is increasing, exerting more influence on the Chinese media landscape and gradually breaking the hegemony of traditional media. The emerging influence of new media, together with the rise of citizen engagement in

information production and dissemination in China recently, has been a salient issue and an under-researched topic.

This topic is significant and important for several reasons. First, the impact of new media and citizen journalism is clear in China. What happened during the milk formula scandals was a good case in point. The growth of the Internet opens a public sphere in which grassroots public discourse can take place, which is nearly impossible with only the traditional mainstream media under the close direction of the government. Instead of attempting to reform the existing media, Chinese Internet users can use blogs, public forums, and other new media tools to go around the government-controlled media and find their own audience, hence getting people connected and informed in new ways. As a result, although the state control won't go away easily, it may be eroded gradually.

Second, for China, a politically Communist and culturally traditional country, the renovation brought about by the latest new media technologies is theoretically significant and practically meaningful. Last, understanding how the digital landscape is changing and why it is changing in China can help researchers not only be aware of the current trends in Chinese media but also envision the future of the political, economic, cultural, technological, and media aspects of Chinese society.

Health communication studies have confirmed that print and broadcast media remain the public's primary source of health information (Major, 2009; Singer & Endreny, 1993), although traditional media have been criticized sometimes as contributing to the larger problems in society, such as

misperception of public affairs issues, lack of civic discussion, and manipulation of the public mind (Dong, Chang, & Chen, 2008). While analyzing the development of new media, it is necessary to take the role of traditional media into consideration, especially in the media environment in China, where traditional media with support from the government still hold the biggest share of the market, while the Internet is facing censorship that could prevent new media from becoming fully alternative media. In addition, when the society is full of anxiety and uncertainty on food safety issues such as during the tainted formula incidents, traditional media can be very important actors in shaping the public discourse online and setting the public agenda, because they have a huge and established audience base as well as established authority. However, few studies have analyzed in depth the role of new media in comparison with traditional newspapers in China, examining the differences in old and new media when covering public health crises like the formula scandals in China, revealing the agenda-setting processes of each medium and inter-media agenda-setting effect. This study will be among the first to explore this issue.

Theoretical Framework

Agenda-setting theory has been a fundamental theory in mass communication research, providing a well-established theoretical framework for researchers to understand the powerful influence and the pervasive role of the media, and to analyze the formation and transfer of issues from media agendas to public agendas. Generally speaking, agenda-setting theory argues that media select certain issues and report them frequently and prominently, which leads the public to perceive those issues as more important than other issues of the day

(McCombs, 2005). For the past four decades, the core assumption of agenda-setting theory has been the transfer of issue salience—how the filtering and emphasis of certain issues in media can influence the perceived importance of issues among the public (McCombs & Shaw, 1972). Hundreds of studies have confirmed the effects of media coverage on the formation and development of public discourse (McCombs, 2004).

Basically, agenda setting concerns three categories: 1) media agenda setting: issues discussed in media (newspapers, television, radio, Internet), factors such as media type, source, etc., that are influential in the selection of issues, how the issues become important in media; 2) public agenda setting: issues discussed as personally relevant to people and how the issues become the public's priorities; and 3) policy agenda setting: the legislative agenda of policymaking bodies and how the issues become important to policy makers (Kosicki, 1993; Wallington, Blake, Taylor-Clark, & Viswanath, 2010, p. 77). The three categories are distinct but related. In other words, media agenda setting, public agenda setting, and policy agenda setting are different in that they each represent one specific aspect of the society. Meanwhile, they are also tightly intertwined, as media agenda, public agenda, and policy agenda develop in concert with each other (Kosicki, 1993). For example, there is inter-media agenda setting between mass media like newspapers and television (i.e., Roberts & McCombs, 1994), and between the media agenda represented by newspapers and the public agenda represented by online forums or blogs (i.e., Roberts & McCombs, 1994; Roberts, Wanta, & Dzwo, 2002; Lee, Lancendorfer,

& Lee, 2005). In addition, different media have different potential in setting agendas due to differences in their content, audience, penetration, etc.

In mass communication research, both first-level agenda setting and second-level agenda setting have been studied (McCombs & Shaw, 1972; Kiousis & McCombs, 2004). First-level agenda setting is the core theoretical notion in traditional agenda-setting research, focusing on the amount and prominence of issue coverage. It has been established in first-level agenda-setting studies that the media's concern with issues in the news can lead to an increase in the public's concern with those issues (Kiousis & McCombs, 2004), suggesting that the media can decide which issues the public will be aware of. In contrast to the traditional emphasis in agenda-setting research, second-level agenda setting links the agenda-setting process to framing, examining the influence of attribute salience—the properties, qualities, or characteristics that describe objects in the coverage—and the tone of those attributes (Ghanem, 1997).

Although originally developed for the studies of politics, the agenda-setting framework has been applied to many different areas, including health communication (Roger, 1996; Wallington, Blake, Taylor-Clark, & Viswanath, 2010), sports journalism (Seltzer & Dittmore, 2009) and others. The importance of the agenda-setting effects of mass media on health issues in the society has been well documented (Rogers, 1996). McCombs (2005) demonstrated that “whether the basic agenda setting effects of news media continue in much the same fashion as the previous decades or eventually disappear because of the

changing media landscape, measuring these effects will remain high on the research agenda for at least the near term” (p. 546). Given the appropriateness and adequacy of the agenda-setting theory, the competing agenda environment of new and traditional media in China would appear to be a natural new setting for the evaluation and validation of the efficacy of agenda-setting theory by clarifying the roles and interactions of mainstream newspapers, bloggers, online forum discussants in the construction of discourses surrounding a public health crisis, predicting the future media landscape in mainland China.

However, there is weakness in agenda-setting theory. The notion of agenda setting derives more or less from a mass society perspective, acknowledging the powerful role of media in the society and implying a direction of causal influence from media to audience (Baran & Davis, 2009). Audiences' differences in perception and understanding were of less of a concern in traditional agenda setting research (Baran & Davis, 2009). Moreover, the emergence of the Internet changed the communication landscape, challenging the defining features of mass communication since early 20th century including mass production, lack of individual control, and a limit on the number of channels (Chaffee & Metzger, 2001). Instead, the Internet is decentralized, with myriad new channels and content options available. People's ability to choose, produce and deliver content is enhanced greatly. Blogs, citizen media, and social network sites, representing different ideological, commercial and personal niches, have changed people's communication behaviors across the world and opened vast new territories to

communication researchers for the agenda setting role of new media (Chaffee & Metzger, 2001).

Theoretical and Practical Contributions

This study holds the potential to make a variety of important contributions to the theory and practice of mass communication, new media research, and Chinese media research. By applying agenda-setting theory to both Internet-based media and traditional mainstream media in China, the study will lend insights into a practical situation and extend its boundary to a different cultural context. Because academic scholarship about new media in China is still in its infancy, it is suitable to apply agenda-setting theory to a new medium that continues to grow in scope and popularity. Through examination of the coverage of a public health crisis in mainstream newspapers, online forums, and blogs from an agenda-setting perspective, this content analysis will show how the old and new media set agendas for the public and in what ways, exploring how the public agenda came into being, examining the influence the old and new media agenda had on the public agenda and vice versa.

Therefore, this investigation not only builds and extends agenda-setting theory to new media platforms in a country with a different media system, but also contributes to the assessment and progress of the theory. An imperative criterion in assessing the usefulness of a social science theory is to determine its theoretical scope of generality (Shoemaker, Tankard, & Lasorsa, 2004). If a theory is high in scope, it can be applied to various situations and settings. The value of the agenda-setting theory in explaining the influence of traditional news media on audiences by transferring the media agenda and issue salience to the

public agenda in the Western media systems has been well established. The setting for the current study—old and new media tools such as blogs and online forums in China—provide a compelling new situation for testing the theoretical scope and assumptions of agenda-setting theory.

The uniqueness of the study also lies in the contrast between the old and new media and the examination of inter-media agenda setting between the two medium types during a time of public health crisis. The comparison helps us not only explore the interplay of the old and new media but also enhances the understanding of each medium, demonstrating whether and how the different media from which people are getting their information and building their opinions are indeed different. From a theoretical perspective, adding inter-media agenda setting into the current study allows for more comprehensive examination of the theory. Moreover, this study reinforces the explication of the agenda-setting process to include both object and attribute salience. In other words, it examines first- and second-level agenda setting.

As previously noted, there is a need for more scholarship on new media development in China. This explanatory and predictive study helps contribute to the overall body of knowledge in new media research and Chinese media research, while introducing an established theoretical framework into the two research areas. With the hope that this issue-specific quantitative study can shed light onto a broader ground, this study can help to explain the implications of the interplay between the media systems and social structure in China today. Based on agenda-setting and framing research with roots in the broader mass

communication field, and built from previous literature on health communication and international/intercultural communication, this research takes a multidisciplinary approach and incorporates perspectives from Chinese society.

Additionally, this study holds the potential to make practical contributions. This research addresses an area of growing importance in the media landscape in China, analyzing the unfolding political and social implications of the Internet and new media development, and envisioning the short-term and long-term future of news and communication in China. More specifically, this research helps to gain insights into some issues related to the Internet in China—for example, the government’s intention to control information versus the public’s struggle to speak freely to reveal social problems and express dissatisfaction with the government. Also, by examining the issue salience, framing styles, tones, participation patterns, sources citations, and use of hyperlinks/multimedia in mainstream newspapers, online forums, and blogs during the milk formula scandals, this study provides an overview of communication strategies and tactics used by media practitioners and Internet users, demonstrating their different goals as well as their different ways of thinking and communicating. While evaluating the communication strategies and tactics, this research offers suggestions to the Chinese government, media, and the public on how to adapt to the new information environment, especially on how to build crisis-response strategies that can cope effectively with public health crises specific to Chinese society in the digital age.

Purpose and Overview of the Study

The main purpose of the study is to apply agenda-setting theory in examining the discourses surrounding the milk formula scandals from 2008 to 2011, exploring the influence of the emerging new media and citizen journalism in mainland China, hence predicting future development of the media landscape in China. The focus of the study is on two distinctive discourses: 1) public discourse resulting from the citizen participation in information/opinion production/dissemination and civic discussion on new media platforms, including online forums and blogs in China; and 2) government discourse disseminated by the mainstream Chinese newspapers. More specifically, this quantitative content analysis emphasizes: 1) the formula-scandal-related content posted in online public forums and blogs by citizens, which represents the public discourse developed within the online public sphere; and 2) the formula-scandal-related content released by the mainstream newspapers, which represents the government discourse. Examining what the two discourses were and how they came into being throughout the exposure and development of a public health crisis helps us to better understand the roles of different media in China and to construct comparisons and correlations between the old and new media.

For discussions about the milk formula scandals in Chinese online public forums, the story focus, tone, sources, size of participation, and patterns of discussion are analyzed. For formula-scandal-related blog posts written by Chinese Internet users, including health experts, parents, average citizens, or journalists, the story focus, frames, tone, sources, participation patterns and the use of hyperlinks and multimedia are analyzed. In comparison, the story focus,

frames, tone, and sources in mainstream Chinese newspaper coverage of the tainted formula scandals are also examined, so as to gain insights into the roles and potential differences of media in China.

In the following chapters, Chapter 2 examines the theoretical constructions and literature review in five sections: agenda-setting theory, citizen journalism, media in China, food safety issues in media coverage, and synthesis. Based on the previous studies, research questions are proposed at the end of Chapter 2. Chapter 3 covers the research method—content analysis—used for the study. Chapter 4 reports the statistical results for each research question. Chapter 5 analyzes the findings, discussing the theoretical contributions, practical implications and the limitations of current study, and suggesting directions for future research.

CHAPTER 2 LITERATURE REVIEW

Agenda-Setting Theory

Evolution of Agenda-Setting Theory

Cohen (1963) pointed out that mass media “may not be successful much of the time in telling people what to think, but it is stunningly successful in telling its readers what to think about” (p. 13). Agenda-setting theory holds that “the news media can set the agenda for public thought and discussion” through their choices of what stories to consider newsworthy and how much prominence and space to give the stories (McCombs & Reynolds, 2002, p. 1). The core concept of the theory is the transfer of the issue salience from the media agenda to the public agenda (McCombs, 2004; McCombs & Ghanem, 2001; McCombs & Shaw, 1993; McCombs, Shaw, & Weaver, 1997).

Nearly a century ago, the intellectual forefather of agenda-setting theory, Walter Lippmann (1922) argued that mass media can paint “the pictures in our heads” and serve as a conduit to “the world outside” (p. 4). The role of the press is “like the beam of a searchlight that moves restlessly about, bringing one episode and then another out of the darkness into vision” (Lippmann, 1922, p. 364). He realized that, rather than from direct experience, the public normally learns about news or issues from second-hand sources such as the press; the news and issues chosen by the press often then become the issues with the highest importance in people’s perception (Lippmann, 1922). Lippmann’s extrapolations were later tested by Max McCombs and Don Shaw in their empirical study (McCombs & Shaw, 1972). After McCombs and Shaw’s ground-

breaking study of the role of the media in the 1968 presidential campaign in Chapel Hill, North Carolina, the agenda-setting theory was first introduced in 1972 (McCombs & Shaw, 1972).

McCombs and Shaw (1972) hypothesized an agenda-setting process from the mass media coverage of a political campaign, in which media emphasis (i.e. frequency of coverage, length, and placement) were disseminated to the public with a rough ranking (agenda) of what the important issues were over time.

Theoretically, the media agenda would be known and internalized by the public until the public priority ranking of issues mirrored the media emphasis on issues (McCombs & Shaw, 1972). McCombs and Shaw (1972) tested the hypothesis with a two-pronged study: They first asked undecided voters what they thought the most important issues in the campaign were, then conducted a content analysis of the campaign coverage in nine state, local, and national media. The study found a strongly positive correlation between the media agenda and the public agenda, supporting the hypothesized media effect on what issues people think are important (McCombs & Shaw, 1972). In other words, issue salience in public agenda is greatly influenced by the amount of media coverage of the issues (McCombs & Shaw, 1972).

Since the seminal study of agenda setting by McCombs and Shaw, hundreds of empirical studies of the theory have delved into its different dimensions. The vast majority found support for the influence of media on people's perceived importance of issues. For example, in a study of public opinion trends during the 1960s, there was a correlation of .78 between news

coverage and people's perceptions of the most important issues of the time (Funkhouse, 1973). When examining agenda setting for civil rights issues between 1954 and 1976, a correlation of .71 between the media content and public opinion was revealed (Winter & Eyal, 1981). More recently, it was found that print and broadcast media coverage of the economy may have serious consequences on consumer economic evaluations and expectations, particularly when the coverage is negative (Hester & Gibson, 2003). Based on a national poll and a content analysis of network newscasts, it was found that the more media coverage a foreign nation received, the more likely people in the United States were to think the nation was vitally important to U.S. interests (Wanta, Golan, & Lee, 2004). For online media, Ku, Kaid, and Pfau (2003) found that there were interactions between political websites, news content, and public opinion, demonstrating the significant agenda-building function of the Internet in shaping and determining the issues most salient to the general public.

Agenda-setting effects have also been evident outside the United States. Through comparisons of six major concerns on the public agenda with local news coverage in Spain, a high degree of correspondence was revealed between patterns of news coverage and the public agenda about local problems (Canel, Llams, & Rey, 1996). Based on a panel survey in Sweden, Shehata (2010) found that the agenda-setting effects of media were present because the percentage of people naming unemployment as the most important political issue increased by 17% as it dominated news coverage during the 2006 Swedish National Election campaign. In Japan, agenda-setting effects of media on national policy making

and policy adoption for smoking control were observed (Sato, 2003). Overall, when generalizing the agenda-setting theory to different contexts, most researchers have confirmed that topics emphasized in news coverage and the amount of coverage given to the topics in news media play an important role in transferring the media agenda to the public agenda (McCombs & Ghanem, 2001; McCombs & Reynolds, 2002). Thus, a lack of attention given to a topic by the media decreases the likelihood that the topic will be on the public agenda (Wanta & Wu, 1992).

In the process of agenda setting, from media agenda to public agenda, there are factors that can influence the agenda-setting effects—the need for orientation and obtrusiveness of issues (Miller, 2005). People vary in their need for orientation. Because higher levels of interest and uncertainty produce higher levels of need for orientation, people who are more interested and uncertain about the issues are most likely to be influenced by media (Miller, 2005). It also has been proposed that agenda-setting effects should be strongest for unobtrusive issues, with which the audience has not had direct experience, because they must rely on media for information about those issues (Miller, 2005). Gandy (1982) suggested going “beyond agenda-setting to determine who sets the media agenda, how and for what purpose it is set, and with what impact on the distribution of power and values in society” (p. 266).

Some researchers have gone beyond the relationship between media and public agendas, adding another component—the policy agenda—into research (Dearing & Rogers, 1996; Edwards & Wood, 1999). The policy agenda is defined

as those issues to which political institutions (i.e. government, the president) give serious consideration and devote substantial attention (Edwards & Wood, 1999). Researchers have argued that political institutions' policy agenda is inherently responsive to media coverage (Edwards & Wood, 1999), and is intertwined with both the media agenda and the public agenda (Dearing & Rogers, 1996). In China, where all the media are state-owned and the media content is controlled by the government, the media agenda is almost the same as the policy agenda or government agenda.

There are several dimensions of agenda setting, including first-level agenda setting, second-level agenda setting, and inter-media agenda setting. First-level agenda setting is the most traditionally studied level, which posits that, intentionally or not, media use objects or issues to influence the public. Further, each of the objects/issues on an agenda has numerous attributes, which are the characteristics and properties that describe the object/issue. Both the selection of objects for attention and the selection of attributes to describe those objects are powerful agenda-setting tools (Bryant & Oliver, 2008). So, beyond the agenda of objects/issues, or first-level agenda setting, there is second-level agenda setting, which focuses on the attributes or characteristics of the objects/issues. Unlike first-level and second-level agenda setting, which both emphasize salience transfer from the media to the public, inter-media agenda setting stresses salience transfer among different media. So far, only first-level agenda setting has been discussed in this section. The following two sections will discuss second-level agenda setting and inter-media agenda setting in depth.

Second-Level Agenda Setting and Framing

Merging traditional first-level agenda-setting research with framing research, second-level agenda-setting research shifts the focus from the mere transfer of issue salience to include the transfer of attribute salience (Kiousis & McCombs, 2004; McCombs, 1994). It is necessary to distinguish between first-level and second-level agenda setting. First-level agenda setting is the contribution of overall media to public assessment of issue importance (“what to think about”), while second-level agenda setting concerns the way an issue is framed in the media (“how to think about it”) (McCombs, 2004). For example, first-level agenda setting is concerned about how the amount of media coverage on a political campaign can influence people’s awareness of the campaign, while second-level agenda setting emphasizes how the media coverage of certain attributes of the political campaign can affect people’s perception of the campaign. Therefore, second-level agenda setting is also referred to as attribute agenda setting, describing how media link attributes such as properties, qualities, characteristics, and tones to objects or issues, which consequently influences the agenda of issue attributes in the public (Ghanem, 1997; Wanta, Golan, & Lee, 2004).

Numerous studies have found support for the assumptions of second-level agenda-setting theory. During the Spanish national elections, McCombs, Llamas, Lopez-Escobar and Rey (1997) found that media coverage of the attributes of political candidates was highly correlated with the public’s ranking of the important attributes of candidates. Examining media coverage of George W. Bush and John McCain during the 2000 Republican primary in New Hampshire,

Golan and Wanta (2001) suggested that media agenda of candidate issues and attributes was significantly associated with voters' evaluations of the candidates. In an experimental study of candidate attributes, Kiouisis, Bantimaroudis and Ban (1999) found subjects' impressions of candidate personality traits mirrored media portrayals of those traits. Craft and Wanta (2004) found that the two attributes that received most extensive news coverage in media coincided with the two attributes of the September 11 terrorist attacks that news consumers were most concerned about. Studying the attributes of foreign nations, specifically how negatively and positively the foreign nations were portrayed in media, it was revealed that the more negative coverage a nation received, the more likely people in the United States were to think negatively about the nation (Wanta, Golan, & Lee, 2004). Taking both first- and second-level agenda setting into consideration, Takeshita and Mikami (1995) found significant evidence for the transfer of both issue salience and attribute salience from the media to the public in Japan.

Examining how issues and attributes of issues are presented by media in second-level agenda setting links the agenda-setting theory to the notions of framing (Kiouisis, Mitrook, Wu, & Seltzer, 2006; McCombs, 1997; McCombs & Ghanem, 2001). Framing is "a central organizing idea ... for making sense of a relevant event, suggesting what is at issue," showing persistent patterns of cognition, interpretation, and presentation (Gamson & Modigliani, 1989, p. 3). Entman (1993) explained that "to frame is to select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to

promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described” (p. 52). Translating it using agenda-setting terms, framing is “the selection of a restricted number of thematically related attributes for inclusion in the media agenda” (McCombs, 1997, p. 6); to frame is to describe issue attributes that characterizes the defining features of the issue (McCombs, Lopez-Escobar, & Llamas, 2000). Therefore, topic selection and framing work together to create agenda-setting effects—“the frequency with which a topic is mentioned probably has a more powerful influence than any particular framing mechanism (a focal point of news presentation), but framing mechanisms could serve as catalysts to frequency in terms of agenda-setting” (Ghanem, 1997, p. 12). In other words, while repeatedly mentioned topics may influence public opinion, the way how these repeated topics are outlined is also influential. For example, newspaper coverage of tainted milk scandals described the same particular scenes in many stories depicting thousands of babies were sick because of the tainted milk formula. One might assume that such coverage from many newspapers nationwide encouraged rescue/relief responses from the government and dairy companies.

There are two dimensions of second-level agenda setting research: substantive and affective attributes. Substantive attributes involve information about qualities of newsmakers, while affective attributes involve positive, neutral, and negative qualities, which link to the positive, negative or neutral tones of media coverage in framing research (McCombs, Llamas, Lopez-Escobar, & Rey, 1997). McCombs, Lopez-Escobar, and Llamas (2000) found that public

perceptions of substantive and affective attributes were closely related to media coverage of those attributes; people linked their positive or negative evaluations of political candidates to media coverage.

Who sets media agenda, or the sources of media agenda, is another important issue to look at in agenda-setting research. The selection of sources by news media is important, because sources have the power to shape the news reports and influence the media agenda (Berkowitz, 1987; Messner & Distaso, 2008; Salwen, 1995; Weaver & Elliott, 1985). Scholars in the early 1980s began to ask who sets the media's agenda (Bryant & Oliver, 2008). Among the various factors that shape the media agenda, source is one of the key factors. Zoch and VanSlyke-Turk (1998) stated that the choice of sources can influence media's construction of reality: "news is not necessarily what happens, but what a news source says has happened" (p. 763). It is necessary to examine the sources that set the media agenda, which in turn can set the public agenda. McCombs (2005) pointed out that the sources of the media agenda have become increasingly important in a news environment that is dramatically changing through the Internet.

Not only individual sources such as politicians, public officials, public relations practitioners and other individuals, but also organizational sources such as the government, health agencies, and commercial companies influence the process of agenda setting. For example, examination of *The New York Times* and *The Washington Post* during the 1960s and 1970s showed that almost one fifth of their news stories were based on press releases and press conferences

(Bryant & Oliver, 2008). A special organizational source is the media organization. The interactions and influence of various media on each other, a phenomenon called inter-media agenda setting, plays an important role in the ultimate shaping of the media and public agenda (McCombs, 2004).

Inter-media Agenda Setting

Inter-media agenda setting was first noticed in the standardization of news stories among newspapers using wire services (Roberts & McCombs, 1994; White, 1949). Gold and Simmons (1965) reported influences on patterns of coverage in Iowa newspapers by the *Associated Press* wire service. Later, the agenda-setting effects of leading newspapers on other newspapers and television networks were revealed. Reese and Danielian (1989) found that *The New York Times* played an initial agenda-setting role for other newspapers and television networks when covering the drug issue during 1985 and 1986. Trumbo (1995) demonstrated that elite newspapers had a significant agenda-setting effect on the national television networks concerning the coverage of global warming from 1985 to 1992. Roberts and McCombs (1994) found that local television coverage reflected the issue agenda of local newspapers during the 1990 gubernatorial campaign.

Extending to the new media environment, inter-media agenda-setting was also evident. Online citizen media challenges as well as supplements the established media as the sole holder of truths (Bryant & Oliver, 2008; Meraz, 2009). Yu and Aikat (2006) found convergent agendas between online news sites, including Google News and Yahoo News, and the traditional print and broadcast media such as *The New York Times*, *Washington Post*, CNN, and

MSNBC. In South Korea, it was also revealed that the leading online newspaper exerted influence on the issue agendas of both other online newspapers and the online wire service (Lim, 2006).

The agenda-setting role of traditional media on online bulletin boards was noted. Examining the online media coverage of selected issues from five news outlets during the 1996 fall political campaign, Roberts, Wanta and Dzwo (2002) found that discussion of the selected issues in the online bulletin boards was correlated with news media coverage, with time lags varying from one day to seven days, showing that news media have been setting the agenda for bulletin board discussions, which to some extent served as a surrogate for the public agenda. A similar finding of an inter-media agenda-setting effect from newspapers to online bulletin boards was observed in South Korea, too (Lee, Lancendorfer, & Lee, 2005). Studies demonstrated that the agenda-setting role is assumed by not only mass media but also by opinion leaders in interpersonal networks; for instance, the agenda-setting effects of mass media on the public agenda could be reinforced by interpersonal communication (Yang & Stone, 2003; Wanta & Wu, 1992), as happens in online bulletin boards where messages from media are filtered and strengthened through interpersonal discussions.

For blogs, they are not only influenced by traditional media agendas but also able to exert influence on mainstream media's agendas. Using the CBS 60 Minutes segment about George W. Bush's military service in Texas Air National Guard as a case study, Dylko and Kosicki (2006) argued that traditional journalists relied on information from blogs; blogs therefore were able to push

stories onto the mainstream media's agenda. Farrell and Drezner (2008) found that top political blogs can socially construct agendas that act as focal points for mainstream media. During the 2004 presidential election, Cornfield, Carson, Kalis and Simon (2005) found that weblogs can create an intense buzz on certain issues, which are transferred into traditional media. Through a comparative content analysis of selected national blogs and news outlets, Lee (2006) found that there was a positive correlation between rank-ordered issues in both the blog and media agendas. Messner and Distaso (2008) discovered that mainstream newspapers have been legitimizing blogs as sources while being major sources for blogs. Consequently, a news source cycle between the traditional media and blogs was created, and information passed back and forth from medium to medium (Messner & Distaso, 2008). In addition, it was revealed that in top independent political blogs and elite newsroom blogs, traditional elite media's agenda setting monopoly power was diluted by online media such as Yahoo News, MSNBC and citizen media like blogs, YouTube, etc. (Meraz, 2009).

Generally speaking, mass media can and do influence the perceived importance of issues among the public, providing people with information to use in their online discussions and stimulating interest in topics among the public. Internet users take agenda-setting one step further—they bring the topics that interest them from mass media to online discussions in online forums, citizen blogs, social networking sites, hence making the issue more prominent on the agenda of the society (Roberts, Wanta, & Dzwo, 2002).

Citizen Journalism

Development of Citizen Journalism

Citizen journalism, also referred to as “grassroots journalism,” is defined as “the act of a citizen, or group of citizens, playing an active role in the process of collecting, reporting, analyzing and disseminating news and information” (Bowman & Willis, 2003, p. 9). It is “a philosophy of journalism and a set of practices that are embedded within the everyday lives of citizens, and media content that is both driven and produced by those people” (Atton, 2003).

The roots of citizen journalism can be traced back to the time of Ben Franklin, Thomas Paine and the anonymous authors of the Federalist Papers in the 18th Century. At that time, Ben Franklin’s *Pennsylvania Gazette* was civic-minded; pamphleteers such as Thomas Paine printed their own publications to disseminate what they called common sense (Gillmor, 2004). Like citizen journalism today, the anonymous authors of the Federalist Papers analyzed the proposed Constitution and argued the fundamental questions of how the new republic might work for the public, which became “essentially a powerful conversation that helped make a nation” (Gillmor, 2004, p. 2). In recent history, citizen contributions have been an important part that cannot be neglected in media. There are letters to the editor and op-ed articles written by non-journalists in newspapers; the rise of talk radio and call-in shows on TV gave average people opportunities to share their opinions with a large audience (Glaser, 2006). In the late 1980s, the advent of desktop publishing made it possible for people to design and print their own publications, although the distribution was still limited (Glaser, 2006). The arrival of the World Wide Web in the 1990s removed the

bottleneck of distribution, making it free or inexpensive to publish to wide audience; the subsequent development of new technologies allows people to use mailing lists, forums, personal home pages, blogs, etc., to share their thoughts with the world (Gillmor, 2004; Glaser, 2006). Individuals can capture and share personal experiences or issues perceived to be in the public interest with others without following rules of traditional media or paying a price for their activities (Moyo, 2009). This gives rise to crowdsourcing and participatory journalism.

Beginning from the early 1990s, the idea of getting citizens involved in the newsgathering and news production process “grew from isolated instances to a more concerted effort by media organizations” (Muthukumaraswamy, 2010, p. 49). Since then, previously passive audience has increasingly contributed to news production and dissemination throughout the world. According to the Pew Center for Civic Journalism, some form of civic journalism was practiced by at least 20% of U.S. newspapers in almost every state and every region from 1994 to 2000 (Friedland & Nichols, 2002).

In the 2000s, more and more newspaper or TV websites have been opened up to reader comments or emails from readers to the journalist of a bylined story, allowing readers to react to, criticize, praise or add to what’s published by professional journalists (Outing, 2005; Project for Excellence in Journalism, 2007). Many newspapers have begun online forums in which readers can participate and incorporated reader blogs into professional news websites; some newspapers have started journalists’/editors’ blogs to share the inner working of the newsroom with readers to demonstrate transparency and have a public

dialogue with readers (Outing, 2005). Such traditional-media-attached forums and blogs increase the interactivity of the mass media overall by widening opportunities for reader-to-reader and reader-to-media communication (Schultz, 2000). Some newspapers have encouraged readers to contribute or collaborate with reporters, doing so-called “open-source reporting,” in which “readers who are knowledgeable on the topic were asked to contribute their expertise, provide guidance to the reporters, or even do actual reporting which will be included in the final journalistic product” (Outing, 2005). In addition, many newspapers or TV stations have started to use work from citizens to add to their media content. For example, mainstream media sites run by BBC and MSNBC accepted photos and video taken by ordinary citizens with their camera phones for the reporting of the London bombings on July 7, 2005 (Glaser, 2006). Today, we have iReport on CNN, iCaught on ABC, uReport on Fox, and FirstPerson on MSNBC.

Such practices are termed crowd-sourced journalism, collaborative journalism, networked journalism, or participatory journalism. Crowd-sourced journalism refers to outsourcing the journalism work traditionally performed by professional journalists or news institutions to an undefined, generally large group of people in the form of an open call (Muthukumaraswamy, 2010). Networked journalism, similar to collaborative journalism, means that professional and amateur journalists work together, linking to each other to share facts, questions, answers, ideas and perspectives in news reporting (Beckett, 2008; Shirky, 2009). In networked journalism, the process of news making instead of the final news products becomes even more important (Beckett, 2008).

News is no longer an authoritative political institution. Journalists are actually sharing their ability to tell news with people outside the news institutions (Robinson, 2009). Similarly, participatory journalism allows users to contribute to journalistic processes with technologies available, giving them greater agency or authority to influence news making (Singer, Domingo, Heinonen, Hermida, & Paulussen, 2011). Nevertheless, how journalist- and user-generated content become combined on news sites differs greatly (Mitchelstein & Boczkowski, 2009; Thurman, 2008). Yet, the division between news production and news consumption in citizen journalism is converging (Mitchelstein & Boczkowski, 2009).

Generally speaking, citizen journalism, participatory journalism, and crowd-sourced journalism refer to the idea that people without professional journalism training can use the tools of new technologies (i.e. digital cameras, videophones, etc.) and the global distribution of the Internet (i.e. public forums, blogs, etc.) to create, augment or fact-check media on their own or in collaboration with others (Glaser, 2006). However, there are nuances among them. In the classic form of crowd-sourced journalism, people recount not much more than their daily observations (Muthukumaraswamy, 2010). With the focus of crowd-sourced journalism on collective intelligence, expertise may or may not be required for it. Participatory journalism emphasizes the collaborations between the public and the journalists. In participatory journalism, although individual citizens are allowed to perform some of the communication functions previously controlled by media,

journalists still have higher level of control in news production (Domingo, Quandt, Heinone, Paulussen, Singer, & Vujnovic, 2008).

The classic form of citizen journalism means that people do what professional journalists do, investigating and reporting originally on public issues on platforms such as: 1) discussion groups including mailing lists, newsgroups, bulletin boards, online forums, and chat rooms; 2) weblogs; 3) collaborative publishing such as Wiki and Slashdot; 4) peer-to-peer applications such as Instant Messaging (IM), Short Message Service (SMS) and social networking sites; 5) legacy media sites launched by newspaper/broadcast organizations as places where users dominate the content, which are different from their official news websites dominated by the work of professional journalists; 6) independent citizen journalism sites owned by citizens and content-created by individual citizens (Bowman & Willis, 2003; Schaffer, 2007). The practice of such citizen journalism emphasizes “first person, eyewitness accounts by participants; a reworking of the populist approaches of tabloid newspapers to recover a ‘radical popular’ style of reporting; collective and anti-hierarchical forms of organization which eschew demarcation and specialization” (Atton, 2003, p. 267), challenging the professionalized and institutionalized practice of mainstream media.

One feature of citizen journalism is that even average people can capture news and distribute it globally on their own. Apparently, the Internet is the most important vehicle for this. There are some milestones in the development of independent citizen media online, including the advent of personal websites, the launch of open-news publishing systems (i.e. Indymedia, OhmyNews, Wikinews,

etc.), the arrival of peer-to-peer applications (i.e. Flickr, YouTube, Digg, Twitter, etc.), and the introduction of some popular online tools (i.e. online forums, blogs, etc.). Additionally, even without the Internet, people can still contribute to news gathering and reporting with technologies such as cell phones (i.e. during the Uganda election and Haiti earthquake) (Goldstein & Rotich, 2008; Heppler, 2010).

The major characteristic of the open-news publishing systems is the free and collaborative nature of news production. Instead of being locked into the standard paradigm of news production and viewership, online users can actively engage in the citizen news sites that allow for open participation. Indymedia, OhmyNews and Wikinews are good cases in point. Having their debut after the World Trade Organization (WTO) meeting protests in Seattle in 1999, Independent Media Centers, popularly referred to as “Indymedia,” are grassroots news websites where anyone can share photos, text and video with other activists and the world (Muthukumaraswamy, 2010). Another pioneering effort in citizen journalism is OhmyNews, which was launched in 2000 in South Korea (Glaser, 2006). With the motto “every citizen is a reporter,” OhmyNews is a popular news site dominated by readers, as the majority of news stories there were written and submitted by audience member (Glaser, 2006). Being part of Wikipedia, the famous online encyclopedia, Wikinews is a citizen journalist site, start in 2004, that allows “anyone with Internet access to publish and edit journalistic content directly on its site without prior authorization or registration,”

relying on the collaboration of people to correct mistakes and guarantee accuracy (Thorsen, 2008, p. 935).

The popularity of peer-to-peer applications such as Flickr and YouTube add new aspects—photos and video—to citizen journalism. It is not always possible for professional journalists to be where news events take place. However, with the help of cameras, video cameras, and cell phones, ordinary citizens can bring to the public's attention user-generated multimedia content on issues that otherwise may go unreported (Moyo, 2009). Begun in February 2004, Flickr is a Yahoo-owned photo-sharing website that is evolving significantly. Started in 2005, YouTube now hosts millions of user-generated video and video blogging, in which users express their opinions about current events, politics, and entertainment. Some have recognized YouTube as “nothing less than a cultural, sociological, and economic transformation” (Garfield, 2006, p. 224). Other applications such as podcasting, Twitter, etc., also provide ways for citizens to deliver content they create or re-deliver content from others (Gillmor, 2010). Digg and Newsvine are interesting meta-journalism sites as an alternative model of citizen journalism, in which users post news stories from external websites including mainstream news websites, blogs, and amateur content (Goode, 2009). Similar to YouTube, they aggregate and rank user-generated and user-selected content, defining news and journalism in an innovative way. These citizen journalism sites provide models for emerging news production, consumption and participation practice, helping to reconfigure the public sphere (Goode, 2009).

Publishing a blog or dialogues in online public forums are examples of self-expression and means of establishing ones' identities in a broad socio-cultural context (Bryant & Oliver, 2008). Moreover, the blogging or online discussion activities have added avenues for public discourse that have proven to be effective in influencing the political, media, and social landscape in Western society from time to time (Bryant & Oliver, 2008). Online public forums and blogs are the focus of this study. Their development and characteristics will be examined later. Overall, no matter what form it takes, citizen journalism or citizen media can play a strong role in public life, reviving and magnifying the public sphere.

Public Sphere and Civic Participation

Originally conceived by Habermas (1989), the public sphere is described as a realm of social life that exists between the private sphere and the state sphere in which people come together to discuss public issues and form public opinion. Drawing on Habermas (1989), Schudson (2003) argued that “the press by itself is not democracy and does not create democracy” (p. 198). Rather, journalism was recognized as “opening up and providing a public sphere in which an issue can be debated, and as a communal force” (Schudson, 2003, p. 212). Historically, there are strong ties among public sphere, communities, and journalism (Dailey, Demo, & Spillman, 2008). However, the idea of the public sphere is no longer limited to the traditional media such as newspapers, television, or radio today. It has been extended to the Internet, because the Internet is a potential public sphere where debate and discourse take place with equality and openness (Hurrell, 2005; Li, 2010). More specifically, Brants (2005)

argued that the interactivity embedded in Internet-based communication helps to foster dialogues and deliberations, which are the cornerstones of a well-functioning public sphere.

Despite voices saying that the Internet may discourage people from civic engagement as television does because people's attention, especially youth's attention, can be easily sidetracked to entertainment on media (Putnam, 2000), most people believe that the Internet can provide a sphere to foster public discussion so as to create large-scale public awareness of problems in the society and promote civic participation to work on solutions (Dahlberg, 2001; Kwak, Williams, Wang, & Lee, 2005; Zhou, Chan, & Peng, 2008). Three groups were identified in such online communication: 1) communitarians who promote shared values and community spirit; 2) liberal individualists who facilitate the expression of individual interests; 3) the deliberative group who expand the public sphere based on rational-critical discourse (Dahlberg, 2001). Xenos and Moy (2007) found there were direct effects of Internet use on information acquisition and use; what's more, contingent on levels of political interest, there was also a relationship between Internet use and contemporary civic or political engagement. Bryant and Oliver (2008) revealed that online information seeking and interactive civic conversation were the two major reasons why individuals sought civic participation through the Internet. Shah, Cho, Eveland, and Kwak (2005) demonstrated that the Internet, as a source of political information and a sphere for public expression, complemented traditional media to foster political discussion and civic messaging in the society. Featuring a high level of

interactivity between participants, blogs and online public forums show signs of being virtual communities with network connections to other Web pages, blogs, or online forums (Bryant & Oliver, 2008). In fact, citizen journalism as in blogs or online forums has an advantage over traditional journalism in that it can enhance public participation and foster civic engagement. Through the facilitated expression and conversation, online public forums and blogs expand and renew the concept of public sphere (Gillmor, 2010).

Previously, without the existence of the Internet and Internet-facilitated platforms, the public sphere was weak in China due to the fact that 1) there was limited free space in traditional media or other public forums that allowed for articulation of social issues and sharing of information; 2) there were almost no civic organizations that could act as a routinized social base against state power for citizens; and 3) organized public protest is under state control (Yang, 2003). With the emerging online venues where people could either be discussants in groups or audiences of public discussions, there is a growing possibility of an online public space in China (Li, 2010). Despite Chinese government's Internet controls, online citizen media have revived and magnified the public sphere in China, renovating one of the oldest civilizations in the world. The society or the public sphere, traditionally dominated by government discourse through mainstream media, now has been penetrated by public discourse from new media platforms like public forums and blogs. Zhou, Chan and Peng (2008) claimed that the Internet is increasingly becoming a sphere for Chinese citizens to discuss public affairs, in that it provides users with interactive services such as

online forums and blogs, which can encourage information exchange or opinion expression. Examining issues being widely discussed and the participation patterns of Internet users in online public forums and blogs helps us to gain insights into the formation, characteristics, and potentials of the new online public sphere in China.

Public Forums

Online public forums are conceptualized as a conversational arena or a virtual communication space, in which people can come together to talk with each other, discuss issues, form opinions or plan action, hence allowing for many-to-many asynchronous communication for the public (Morris & Ogan, 1996; Schneider, 1996). In fact, electronic discussion groups, preceding the appearance of the Web, have been around since late 1970s in the forms of Usenet discussion groups, newsgroups, conferences, and forums (Light & Rogers, 1999). Electronic bulletin board systems (BBS), also referred to as online bulletin boards, electronic bulletin boards, or bulletin board services, are one of the earliest forms of online public forums. Ward Christensen, who coined the term “bulletin board system,” began preliminary work in 1978 on what would eventually become CBBS (Computer Bulletin Board System), the first Bulletin Board System (Schweitzer, 2005). A BBS is defined as “an interactive, online, electronic database system” that helps users exchange information conveniently through the Internet (Dewey, 1987, p. 1). The 1980s and 1990s were the heyday of the BBS (Dewey, 1987). Later different types of online forums have come into being, although BBSes remain in use around the world.

Characteristics of online public forums

Online public forums can be free and open to everyone, although there are also closed and private systems. As described by Roberts, Wanta, and Dzwo (2002), an online public forum normally can be categorized into many sub-forums based on subjects, needs and user preferences. In each sub-forum, there are various threads dealing with different topics concerning the subject of interest. Users can choose to only read the messages, to start a new thread by posting a new message, or to respond to the original post or posts from other participants in a developing thread (Antaki, Ardévol, Núñez, & Vayreda, 2005). Each post is marked with a date and time. All the posts are public and visible to others. Conversations take place if different users continue posting in the forums.

Because they offer good places to find people with similar interests and hobbies, online public forums are able to attract users from various backgrounds and gain popularity in different countries. Five potential reasons were identified to explain why online public forums have been popular: they are low cost; they are fast at sending and retrieving information; it is easy to post messages in online forums; and there are many topics, issues, and interests available in online forums; there is a large audience for the online forums (James & Wotring, 1995).

Interactivity and deliberation of users are vital elements in online public forums (Morris & Ogan, 1996; Zhou, Chan, & Peng, 2008). Interactivity is reflected by the responsiveness of communication, in which the roles of the message sender and receiver are equal and interchangeable and the communicative power is more symmetrical than with one-way communication (Kioussis, 2002; Schultz, 2000). Deliberation involves recognizing, incorporating,

and rebutting the arguments of others as well as justifying one's own (Zhou, Chan, & Peng, 2008). A public forum should be able to hold certain level of interactivity and certain degree of deliberation in the discussions among users. Interactivity between users is an essential component for online public forums because the basic function of online public forums is for people to share or negotiate their opinions about various social issues with others (Schneider, 1996). The more the users participate in communication in online forums, the more reciprocity and conversations will be fostered, which is the cornerstone of a well-functioning public sphere (Brants, 2005; Schneider, 1996).

Deliberation is another essential component for online public forums. The deliberative component refers to the idea that public decision-making can be achieved by argumentation offered to and by participants committed to the values of rationality and impartiality (Wright & Street, 2007). For discussions to be useful in a democracy, opinions need to be debated. Deliberative forums can “not only create public space within which citizens can express their respective viewpoints but also afford them the opportunity to elaborate on their positions by being forced to confront individuals who may raise opposing arguments” (McLeod, Scheufele, & Moy, 1999, p. 744). In this sense, online public forums are similar to Group Decision Support Systems, in which anonymous participants experience more freedom to express their own opinions and criticize others' ideas without fear of reprisal. The consequent substantive conflicts may facilitate consensus-finding processes and enhance the decision-making (Dubrovsky, Kiesler, & Sethna, 1991).

Patterns of participation

There are various topics for discussion in online public forums. Users can post news, information, or commentary. Unlike face-to-face interactions, users are anonymous in online discussions. Wright and Street (2007) developed three categories of messages in online public forums: 1) seed (to spark new discussions), seek (to make a query), or provide (to offer information or content to the forum); 2) reciprocity, to respond to a previous message or to include opinions or information from sources outside of forums (Barak & Gluck-Ofri, 2007); 3) validation, to offer arguments or reasons for the validity of the participant's positions to achieve rationally motivated agreement. Chen and Chiu (2008) classified messages displayed in online public forums as: 1) contributions that introduce new ideas or information into the discussion; 2) repetitions that repeat the previous content, indicating one's understanding and often agreement with the earlier poster; 3) null content including compliments (i.e. "Good answer!"), simple evaluations (i.e. "no"), general questions (i.e. "What?"), and off-topic messages (i.e. advertisement).

Three structural features of public discussion—network size, discussion frequency, and network heterogeneity—have been identified in online forums (Kwak, Williams, Wang, & Lee, 2005). Network size, an indicator of the forum's popularity, is an important factor in attracting users. However, due to different experiences and expectations, participants may have different levels of engagement in online forums (Light & Rogers, 1999; Schultz, 2000). In fact, it was revealed that, compared to the general traffic, a small number of hardcore active participants contributed the bulk of the discussion to the online forums

(Light & Rogers, 1999). A large number of forum users are lurkers who act as the audience for the discussion by only hitting the thread and reading the messages without leaving any reply, which is called periphery participation (Wu, 2008). In an analysis of Chinese online forums, Wu (2008) found that every 100 hits of a thread generated one to three replies on average; the majority of the hits—86 to 99 hits—was by lurkers. Responsiveness or interactivity between users is an essential component for online discussion, indicating the importance of the message being discussed (Chen & Chiu, 2008). Yet, active participation and periphery participation in discussion are both important to research because such analysis reveals the participation pattern of users and reciprocity of information.

The notion of diversity or homogeneity of discussion is critical for researchers to understand the public discourse because, for discussions to be useful in a democracy, a range of opinions should be debated. Through the back-and-forth of disagreement and discussion, public consideration, consensus and decisions can be made (Dubrovsky, Kiesler, & Sethna, 1991; McLeod, Scheufele, & Moy, 1999). Unlike face-to-face contacts, people are more likely to express their disagreement with others in online anonymous interactions (Chen & Chiu, 2008). The homogeneity of discussion is normally evaluated by whether and how later participants support or oppose the ideas posted before (Zhou, Chan, & Peng, 2008). Researchers also found that, in online discussions, the earlier messages can affect later messages in terms of evaluations, knowledge content, social cues, personal information, and elicitation (Chen & Chiu, 2008).

More specifically, a disagreement in previous messages increased the likelihoods of disagreement displays in later messages (Chen & Chiu, 2008).

Audience agency is another important factor in online participation (Mitchelstein & Boczkowski, 2009). Giddens (1984) viewed that human beings act intentionally as human agency, intrinsically involving with society and actively entering into its constitution. The repetition of the acts of human agency reproduces the structure; further, human agency and social structure are in an interactive and reciprocal relationship (Giddens, 1984). Applying Giddens' structuration theory to online discussion, Internet users as audience agency contribute to the development of online discussion and participation, meanwhile the structure of online participation influence human interaction. Similarly, social practice theory proposed that each individual carries a habitus, which is a set of techniques, references, and beliefs, based on their past experiences and socialization processes; each individual's habitus generates strategies that form the basis of their actions (Bourdieu, 1993, p. 72). Further, many people share repertoire of ways of doing things, hence creating collective habitus; also, the interactions between human agency develop sets of meaning, discourse, practice and ways of thinking within particular contexts (Bourdieu, 1993, p. 72). As a result, culture, collective identity, and individuality are constructed and enacted. According to social practice theory, we can understand that Internet users behave individually and interact with each other as audience agency, developing shared understandings and creating norms, collective values, and

culture in online participation. The online context operates as a lens through which they see the world and through which their practice are mediated.

Blogs

Blogs, or weblogs, began as often highly personal online periodical diaries, posted by individuals in reverse chronological order, telling stories, allowing reader comment and sometimes offering multimedia and hyperlinks (Deuze, 2003). User-generated content in blogs can be presented by texts, pictures, videos, audio, and/or hyperlinks. Anyone can publish at any time and communicate with readers through blogs (Tremayne, 2007). As a result, blogs become a personal publishing system through which anyone theoretically can have access to a worldwide audience (Gillmor, 2004).

Development of blogs

There has been an explosion of blogs on the Internet since the early 1990s, when blogs first appeared (Dailey, Demo, & Spillman, 2008). In the late 1990s, there were no more than 100 blogs with limited influence in the society (Johnson & Kaye, 2004). By 2006, 8% of American adults (12 million) blogged and 39% of the online population in the United States (57 million) read blogs (Lenhart & Fox, 2006). Blogs have established themselves as an important part of online culture.

Blogs can be understood as a new form of communication that shifts the control of information from the hands of mainstream media to the audience, allowing ordinary citizens to express views and engage in public conversation (Gillmor, 2004). There have been some landmarks in the development of blogs and their connection with journalism. In 2002, Senator Trent Lott had to resign because his racist comment in public was caught and kept alive by bloggers,

which led professional journalists and the general public to pay enough attention to it (Bowman & Willis, 2003). In 2004, Rathergate bloggers' pursuit of CBS's use of forged documents in its reporting on President Bush's National Guard service, resulted in the launch of an investigation by CBS and the resignation of Dan Rather from the news anchor desk (Bowman & Willis, 2003). Eyewitness bloggers such as Salam Pax gave stunningly detailed early accounts of the war in Iraq, on which mainstream media failed (Glaser, 2006). In addition, bloggers have been given press passes since the 2004 U.S. political conventions (Lane, 2010). All of the above examples show that bloggers have been given unprecedented opportunities for personal expression. Individuals who do not have any professional journalistic training or background can get engaged with the process of collecting, reporting, analyzing and disseminating news and information (Tremayne, 2007).

Linking this to the notion of citizen journalism, blogs facilitate a decentralized, bottom-up approach to news reporting by helping readers become active partners in news production and dissemination (Gillmor, 2004). In this sense, blogs represent a democratization of traditional journalism (Gillmor, 2010). They have been regarded as a new means for individuals to bypass media gatekeepers to participate in public discourse on important social issues with access open to all (Deuze, 2003). Regardless of the controversy surrounding blogs, either prejudice against them as a journalistic form from professionals or recognition of their merits (Thurman, 2008), blogs have become citizen media that are independent of and sometimes challenging to mainstream

media organizations. Preliminary researchers have attempted to explicate blogs as a social phenomenon, focusing on the blogged content and the social function of blogs on journalistic and public discourse (Deuze, 2003). It was shown that, representing the civic discourse, blogs empowered the public by encouraging expression and conversation so as to expand and renew the concept of public sphere (Dailey, Demo, & Spillman, 2008).

Being either opinionated, informational, or both, blogs cover a wide range of topics and styles. There are domains such as personal journals, opinions, voyeuristic observations, journalistic reporting or gossip in blogs, although most blogs remain firmly rooted in personal disclosure (Bryant & Oliver, 2008; Lenhart & Fox, 2006). Blogs share some characteristics such as open participation, interactivity, multimedia, and hyperlinks. Users can post comments that are published alongside the bloggers' original post (Thurman, 2008). With reader comments, the interactivity or two-way communication between bloggers and readers as well as between readers and readers facilitates conversation (Kiousis, 2002). Hyperlinks and multimedia are the other two important features of blogs that will be discussed in the following section.

Hyperlinks and multimedia

Hyperlinks are references or navigation elements linking to some other internal content within the same domain or some external content that is located elsewhere on the Internet (Deuze, 2003). By linking to more background materials instead of including all of them in the primary text, hyperlinks make online stories more contextual (Tremayne, 2004). Applying network theory to the use of hyperlinks in online news stories and the war blogosphere, researchers

have two major findings: first, the use of hyperlinks in online stories and blogs has been increasing, which is consistent with network theory; and second, there was a mechanism of preferential attachment—story topics had a significant effect on the linking practice (Tremayne, 2004; Tremayne, Zheng, Lee, & Jeong, 2006). International relations stories included a higher number of hyperlinks than other stories (Tremayne, 2004). Moreover, Tremayne, Zheng, Lee, and Jeong (2006) found that ideology, post type, gender, and blogger background can influence the outgoing and incoming hyperlinks in blogs.

It is important to examine hyperlinks in blogs because hyperlinks can direct readers' attention to what bloggers believe is important in a certain social context. There are two basic types of hyperlinks in blogs, including internal hyperlinks and external hyperlinks. Internal hyperlinks are hyperlinks that direct readers to content in the same blog or website. External hyperlinks are hyperlinks directed to Web pages outside the blog or website. Bloggers can create networks by sending hyperlinks that direct readers to other websites and attracting readers into their blogs (Tremayne, 2004). Hyperlinks can link to different sources of content such as legacy news sites, citizen news sites, or original documents, etc. They also can link to different types of content such as textual content and multimedia content. Different sources or content directed to through hyperlinks shows the bloggers' understanding of the issues in coverage as well as their abilities in using new media technology (Carpenter, 2010).

Multimedia refers to the application of photographs, video, audio, slideshows and graphic information (Carpenter, 2010). A study from the Project

for Excellence in Journalism (2007) found that the use of video, photo, or graphics in stories on news organizations was still limited, although on the rise. Based on a quantitative content analysis, Carpenter (2010) found that, in comparison with online newspaper publications, online citizen journalism sites such as blogs were more likely to feature interactive and multimedia components. Hyperlinks and multimedia features in online news articles or blogs are important because they can help to give readers better understanding of stories and easier navigation of websites (Tremayne, 2007).

The Influence of Citizen Journalism

Citizen journalism has been playing an important role in influencing public opinion and engaging citizens in public affairs (Gillmor, 2004; Muthukumaraswamy, 2010). The rise of citizen journalism has been recognized by many researchers as heralding a new era where the power to define news is decentralized (Gillmor, 2004, 2010; Moyo, 2009). Schaffer (2007) maintained that “citizen media is emerging as a form of bridge media, linking traditional media with forms of civic participation” (p. 3). Some typical characteristics of citizen journalism include information sharing, collaboration among users, interactivity, etc. (Gillmor, 2004; Johnson & Wiedenbeck, 2009). Conversation in different forms such as comments and hyperlinks lie in the center of citizen journalism, as it expands two-way communication and provides opportunities for citizen inputs (Johnson & Wiedenbeck, 2009; Lacy, Riffe, Thorson, & Duffy, 2009). Equipped with new technology tools such as SMS, email, and blogs, citizens across the world are able to challenge or augment mainstream media coverage of issues relevant to their lives. The activism of citizen journalism and its impact on

traditional media have been shown in events such as the September 11 terrorism attack, the 2004 Asian tsunami, the London bombings, Hurricane Katrina and presidential elections in the United States, Australia, South Korea, and Zimbabwe (Moyo, 2009; Xin, 2010). Ordinary people helped in the worldwide reaction and relief efforts to the tsunami and flooding in Southeast Asia in late 2004 as well as Hurricane Katrina in the United States in 2005 (Glaser, 2006). Citizen journalism, which challenges the professionalized and institutionalized practices of mainstream media (Atton, 2003), is of special importance in a country like China where mainstream media are still under tight control, while social conflicts are intensifying, as in the milk formula scandals. Based on an analysis of four case studies of citizen journalism practice in China, Xin (2010) concluded that the impact of citizen journalism on Chinese mainstream media is multifaceted, as citizen journalism is sometimes used by mainstream media as a news source as well as an alternative channel to distribute politically sensitive information.

Aside from the challenges brought by citizen journalism to mainstream media, researchers have found that citizen news/blog sites can serve as complements to daily newspapers (Lacy, Duffy, Riffe, Thorson, & Fleming, 2010). Based on a systematic study of the day-to-day practices of citizen journalists, Reich (2008) came to a similar conclusion that citizen journalism can serve as a vital complement to mainstream journalism, instead of its substitute. Reese, Rutigliano, Hyun, and Jeong (2007) revealed that, although blogs managed to retain citizen voices that are not shown in traditional media when covering

current events, most citizen blogs are still an important secondary market for news from mainstream media organizations. Xin (2010) found that citizen journalism is unlikely to be a driving force in promoting social changes compared to what mainstream media can do in China, but citizen journalists can work together with mainstream media to make the information flow in China more transparent. It was argued that online discussions could probably drive the agenda of official media in China (Qiang, 2004).

Media in China

Traditional Media in China

Since China's Reform and Open Policy in the late 1970s, China has been growing into an important global player, emerging as a significant economic and cultural factor in the world. Along with the huge growth in economics, there have been great changes in Chinese media systems. The reform of Chinese media in the 1980s was characterized by the withdrawal of government subsidies and pushing on media into market economics, which gave birth to the unique media system that media are dependent on advertising revenues while also being regulated and content-controlled by the government (Polumbaum, 1990). Some argued that there were underlying conflicts of interests in this system—conflicts between the political priorities of the Party and the principles of the commercialized news media, or clashes between the communist propaganda norms and journalists' pursuit of free speech (Sparks, 2010). In other words, it is hard for media to simultaneously attract a mass audience while keeping strict controls of media content as is required by the state (Sparks, 2010). Regardless of the inner tension for media and media practice, the scope and aims of

reporting have shifted and expanded. The political and social implications of media reform are still unfolding as the government, media, and the public are adapting to this media environment.

Generally speaking, all the media in China, including newspapers, magazines, radio, and TV are state media. The entry into the World Trade Organization (WTO) in 2001 did not change the state-owned nature of media in China, although some outside investors have been allowed to own no more than 49% share of some media (Messner & Garrison, 2006). With a population of more than 1.25 billion, China now has more than 2,000 newspapers with a total annual circulation of more than 26 million, more than 3,200 television stations and 700 radio stations (Press Reference, 2010).

Since the media reform in the late 1980s, there have been basically three categories of newspapers in China: 1) party newspapers as the “throat and tongue” of the party that reflect the party’s voice; 2) trade/professional newspapers with emphases on one area of human life such as business, fashion, art, etc., 3) metro daily newspapers that are more close to people’s daily lives and have relatively more freedom for reporting, although still under the close watch of the government (Press Reference, 2010). There are differences in party affiliation, government control, reporting style, and coverage focus between different types of newspapers. The party newspapers and metro newspapers are the main subjects of this study.

The media reforms also have been applied to radio and television. Since the late 1980s, radio and TV stations in China have been transferring from

government agencies to enterprises, albeit state-owned enterprises, embracing commercial management through the business of advertising and programs rights (Liu, 2010). Similar to newspapers, they maintain political functions alongside their commercial operations (Liu, 2010). Except news and current affairs, there is also a large amount of popular entertainment programming in TV broadcasts in China (Sparks, 2010). For example, there is a popular program called “Super Girl,” which is modeled after “American Idol.” Most major newspapers and TV stations have launched websites, hosting a variety of activities such as online forums/communities, blogs, article/program archive, etc. (CNNIC, 2006).

Development of the Internet in China

Computers were first introduced to China in the mid-1980s and the Internet debuted in China in 1986 (Wei, 2009). The Internet is developing fast in China, as part of the country’s rapid modernization process. The Pew Internet and American Life Project reported that there were “137 million Chinese Internet users at the end of 2006, 165 million by mid-2007, and a whopping 210 million by the beginning of 2008” (Fallows, 2008, p. 5). According to the China Internet Network Information Center (CNNIC), a non-profit organization and the state network information center of China, by the end of 2009, the number of Chinese Internet users had reached 384 million, 28.9% up from 2008; by June 2010, there were 420 million Internet users in China, the largest online population in the world (CNNIC, 2010). The penetration rate of the Internet has grown to 31.8%. Among the entire online population in China, 364 million (98.1%) were broadband users (CNNIC, 2010). There were nearly 10% more male Internet

users than female Internet users in China, at a ratio of 54.8: 45.2 for males and females (CNNIC, 2010). The largest user group is aged 30 or above and accounts for 41% of the whole online population in China (CNNIC, 2010).

Information acquisition is a major reason for Chinese individuals going online—about 80% of Chinese Internet users read news online during the first half year of 2010 (CNNIC, 2010). In another words, online news users have reached 307.69 million in mainland China (CNNIC, 2010), which makes the Internet an important frontier where journalists must compete. Online music, online news and search engines are the top three Internet applications (CNNIC, 2010). In addition, online audio/video, blogs, social networking sites, forum/BBS, and online shopping were also very popular among Chinese Internet users (CNNIC, 2010).

The arrival and development of the Internet in China holds the potential to create a freer public sphere. Researchers have stated that, although the Chinese government still holds tight control over media in China, especially over politically undesirable media content, due to the development of market economics and the Reform and Open Policy started in the late 1970s, there has been increasing openness and freedom for Chinese media (Lee, 2000). First, the Internet provides an alternative information source for Chinese people, so users may be able to search and find information that is unavailable from traditional media or learn about issues otherwise not covered in mainstream media (Sparks, 2010; Wang, 2007). In addition, the World Wide Web makes it possible for Chinese citizens to access foreign news or news coverage of China by foreign media

directly, hearing different voices and remarks (Burger, 2009). Enough information is indispensable for a public discourse to build and for public sphere to exist. Second, the Internet provides ways for Chinese people to easily participate in democratic discourses intentionally or unintentionally. Some independently minded journalists use the Internet to find sources and to publish stories that would otherwise be difficult to develop in mainstream media (Sparks, 2010). For ordinary citizens, Zheng and Wu (2005) argued that “in China the Internet is perhaps the single most important avenues to criticize government policies and to participate in politics” (p. 525).

Admittedly, content distributed online is monitored in China. For example, the “Great Firewall” is used to filter out politically sensitive information that may challenge the Communist Party or undermine national unity and social stability (Zhang, 2006). However, people may use irony, parody, or innuendo to say what they want to say; informed Internet users can read between the lines, hence enjoying a higher level of freedom (MacKinnon, 2008). There have been lively debates online that otherwise won’t be found in a form of public discussion and expression (Sparks, 2010). Wang (2007) revealed that the huge number of online comments and discussions generated during some events in China, such as the anti-Japan protest in 2005, have built powerful public opinion and exerted pressure on the government.

New Media in China

As the online community in China has grown steadily at double-digit rates over recent years, new media tools are making great stride in China (Nielsen China Forum, 2010). Chinese Internet users listen to music, read the latest news,

search online, talk to each other in online forums, connect with friends through social networking sites, play online games, and view user-generated content (i.e. blogs, home video, etc.). Generally speaking, local players have dominated the digital landscape in China. Some popular online applications include Web portals such as Sohu and Sina, which reports the highest online traffic in China (from Alexa.com), search engine Baidu (similar to Google), video-sharing sites such as Tudou and Youku (the equivalents of YouTube), social networking site Xiaonei (the equivalent of Facebook), online public forums like Tianya with a variety of topics on automobiles, arts, entertainment, politics, economics, sports, politics, etc., and blogging services such as Sina Blog.

Citizen media in China have been offering an increasing number of rich and vigorous stories that have attracted nationwide attention and debate, while traditional media were limited by their routinized and institutional forms of newsgathering and news presentation, showing a narrow understanding of what news is (Chang, 2008). The technologies have led to the development of citizen participation, which promotes the spurring and sharing of information and views without the iron control from the government, hence bringing in liberalization to journalism and mass communication (Moyo, 2009). Although the government attempts to curb postings about sensitive issues, especially during socially sensitive periods, Chinese Internet users can always find ways to get around the censorship. It is hard to totally suppress the Internet.

Public forums in China

Online public forums and blogs have been viewed as ideal places for people to express their opinions and interact with others in China (Wang, 2007).

By June 2010, nearly one third (31.5%) of Chinese Internet users had participated in online discussions on a variety of online forums/bulletin boards (BBS); more than half (55.1%) of Internet users were bloggers (CNNIC, 2010). Consistent with what CNNIC found, the survey by Nielsen China Forum (2010) revealed that about one-third of users have taken part in online discussion forums and BBS (bulletin board) sites, which are one of the most politically active place in Chinese cyberspace; more than half of all online Chinese users regularly blogged and used social media to voice their opinions about entertainment, relationships, sports, politics, technology, etc.

Online public forums are very popular in China due to their low cost, easy access, and the abundance of information (Zhou, Chan, & Peng, 2008). People in China can discuss a wide range of topics and issues in online public forums (Yang, 2003). Anyone can start a discussion by posting a new message and starting a new thread, which then grows as others reply to the original message. A large number of audience members can read simultaneously and give feedback immediately. The online public forums can be operated by individuals, commercial companies, or government agencies (Qiang, 2004). At any given time, there are literally tens of thousands of users active in online forums, reading news, searching for information, and debating current events (Qiang, 2004). Compared with the traditional mainstream media, there are more critical remarks about Chinese government policies/practices and various social or political problems in online public forums in China (Yang, 2003).

Blogs in China

Blogs were first introduced into China in 2002 (CNNIC, 2006). By the end of 2009, the number of blog users in China reached 221 million with an annual increase of 36.7%; more recently, the number of bloggers grew to 231 million (CNNIC, 2010). In their blogs, authors post stories, upload video and audio content, receive comments from readers and sometimes respond to these comments. The function of blogs has been changing from merely personal exhibition to information dissemination among larger populations, to share news that is happening now in real time (Bowman & Willis, 2003). Blogs, along with micro-blogs and social networking sites, have become a driving force for the development of citizen media in China (CNNIC, 2010).

A good example to show the growing influence of blogs in China is the coverage of a rare Chinese tiger in 2007. When a rural farmer claimed that he took a photo of a tiger that was thought to be extinct, government authorities and mainstream media went wild for it. Numerous headlines and awards mentioned the farmer. However, some bloggers posted their thoughts that the photo could be manipulated, which meant that the recovery of the rare tiger was falsified. Thousands of bloggers followed up, debating over the truth of the issue. Soon, a blogger posted the same image of the tiger from a calendar he had, concluding the debates in the blogosphere and the false coverage in mainstream media.

Food Safety Issues in Media Coverage

BSE, E. coli 0157:H7, dioxins, hormones, antibiotics, and melamine, to name just a few, are now familiar topics circulating globally and sparking public concern. People nowadays are paying more attention to food safety issues as

there have been more food safety problems exposed by media and more inadequacies in the regulatory systems found under public scrutiny (Frewer, 1999; Gwendolyn, 2009). Issues concerning food safety and public health could quickly transform into highly politicized arenas due to public scrutiny (Gwendolyn, 2009). In China, food safety issues are more prominent than in other countries. From January to May 2010, 108 food poisoning incidents occurred, with 56 deaths and 2,452 people being poisoned across the country within five months (Chen, 2010). In 2010, the Ministry of Health in China issued its first announcement warning about food safety since the country's Food Safety Law was passed (Chen, 2010).

Considering the potential for severe and fatal illness from consuming those tainted food products, effective communication of food safety issues is critical to public health (Fleming, Thorson, & Zhang, 2006). It is believed that the news media's role in providing health information to the public has grown substantially (Major, 2009), although inadequate and inaccurate reporting of public health threats were found repeatedly (Lowrey, Evans, Gower, Robinson, Ginter, McCormick, & Abdolrasulnia, 2007; Roche & Muskavitch, 2003; Voss, 2003). Not only traditional media such as newspapers and television, but also new media such as blogs, social networking sites, etc., serve as sources of health information for people. According to the International Food Information Council (IFIC) (2010), 32% of people said they received their food safety information from the Internet, and 28% said they received theirs from newspapers (28%). Also, 54% of people surveyed reported that media reports would prompt them to make

changes related to food safety, while 8% reported that blogs or social networking sites were most likely to prompt their food safety changes (IFIC, 2010).

Story Focus and Frames

Media coverage of health issues and their selections of topics and frames can heighten the salience of issues and impact the public's health beliefs, attitudes, and behaviors (Gwendolyn, 2009). For public health crises, there are various topics, themes, and frames used in news coverage. Based on an examination of news reports on health topics, including sudden acute respiratory syndrome (SARS), mad cow disease, West Nile virus, etc., researchers found that risks were more likely to be mentioned rather than prevention or treatment (Berry, Wharf-Higgins, & Naylor, 2007).

Examining TV network news coverage of the nationwide recall of the E. coli-contaminated spinach in 2007, Nucci, Cuite, and Hallman (2009) found that 40% of the stories focused on the status of the investigation into the cause of the contamination that led to the spinach recall, and 20% of the stories primarily emphasized the recall (notice or warning). They categorized the story focus in the stories into two major types: 1) public health content including disease symptoms/information, information on the spread of contamination (infected/deaths), state(s) with confirmed cases of illness, type of spinach identified as contaminated, guidelines for handling spinach, and at-risk populations; 2) investigation-related content including who was potentially implicated as responsible for the outbreak, possible causes for the outbreak (intentional), possible causes for outbreak (unintentional), and whether the story directed the viewer to additional information (Nucci, Cuite, & Hallman, 2009, p.

246). They found that more public health content were information about the spread of the contamination, while the majority of stories did not provide any information about the type of spinach contaminated; for investigation-related content, it was revealed that more stories were about investigation status rather than information critical for public health (Nucci, Cuite, & Hallman, 2009).

Analyzing the bird-flu or H5N1 related, content in newspapers and public discussion forums from 1997 to 2006, Hellsten and Nerlich (2010) found that newspaper articles focused more on solutions such as vaccination and drug developments, suggestions and discussion on how to contain the potential pandemic as well as political decisions regarding pandemic preparedness, while the online public discussion covered a wider range of topics, including basic information about bird flu, catastrophic prediction connecting to biblical images of Armageddon, or alternative views with humorous undertones. For West Nile virus, it was found that major North American newspapers in 2000 exhibited mixed success in providing information on symptoms and risk-reduction measures, while performing poorly in providing risk information such as that related to serious infection, illness, and mortality (Roche, & Muskavitch, 2003). Liu (2010) analyzed the news coverage of the Sanlu tainted formula scandal by the Xinhua News Agency, the leading news agency in China, and showed that the coverage focused on solutions such as law enforcement actions and providing good medical care to sickened babies, while avoiding addressing the government's failure to prevent the crisis from happening and staying away from reporting on people's grief and moral assessments.

In coverage of public health crises or food safety issues, frames can provide cues about how to define news and how to interpret the communicative acts within the specific context (Entman, 1993). Analyzing media coverage of controversial scientific issues such as stem cell research, Nisbet, Brossard, and Kroepsch (2003) found that the most dominant frames included strategy/conflict, ethics/morality, policy background, and scientific background. However, strategy/conflict frame was more likely to appear as a dominant frame, while other frames such as ethics/morality were more likely to appear as secondary and complementary frames, showing the focus of newspaper coverage over the issue (Nisbet, Brossard, & Kroepsch, 2003). In an analysis of newspaper coverage of Hurricane Katrina, Dill and Wu (2009) found that government failure and the unimaginable destruction were the most predominant frames. In addition, the uncertain future frame, the distress frame, and the attribution of blame frame were also common (Dill & Wu, 2009). Examining how *The New York Times* framed three public health epidemics (mad cow disease, West Nile virus, and avian flu), it was revealed that two frames were employed consistently: 1) the action frame that emphasized preventative and treatment actions; and 2) the consequence frame that focused on the influence of the diseases such as victims, cost, and social impact (Shih, Wijaya, & Brossard, 2008). Frames such as economic consequences, attribution of responsibility, conflict, human interest, and severity were found in newspaper coverage of SARS (Luther & Zhou, 2005). Examining the Xinhua News Agency's coverage of the Sanlu tainted formula scandal, three major frames were identified: 1) government reaction frame; 2)

treating sickened babies frame; and 3) punishment frame, among which the government reaction frame was dominant (Liu, 2010).

Tones and Sources

Tone can be understood as the capability of words to show inner feeling, meaning, or judgment on the issues being covered. There is a global attitude measure that can be used to measure the tones of news coverage, including six aspects: negative/positive, foolish/wise, worthless/valuable, unacceptable/acceptable, bad/good, and unfavorable/favorable (Burgoon, Miller, Cohen, & Montgomery, 1978). The most frequently used measurement for tones is negative, neutral and positive.

Sources that provide information have been recognized to have a major influence on news coverage (Gan, 1979). Journalists rely on sources for interpretation. In China, public health information such as food safety alerts, issue updates, mass food recall, etc., is always disseminated to the public through press releases or press conferences by the government agencies responsible for supervising food safety. Studies have shown that information subsidies such as press releases from the government play a vital role in structuring media agendas, especially in times of public health crises (Berkowitz & Adams, 1990), which is probably due to the authority of the government and the resources in their hands to develop and disseminate information (Gans, 1979). Nucci, Cuite, and Hallman (2009) found that the role of government information subsidies in disseminating information is critical to public health. Other than government sources, health agencies, industry, and university sources, often represented by spokespersons, were frequently cited as well

(Nucci & Kubey, 2007). It was also found that, except within the context of treatment, when non-experts and experts were cited proportionally, expert sources were always cited more frequently than non-expert sources in the discussion of health topics (Berry, Wharf-Higgins, & Naylor, 2007). Research in science reporting has shown that a greater quantity of scientific sources and experts such as scientist, research reports, and health professionals (Ramsey, 1999) lend greater credibility to news stories. With different sources such as the government, health agencies, industry, universities, independent organizations, experts and non-experts, it allows for multifaceted coverage of public health crises.

Synthesis

So far in this chapter, previous literature about agenda-setting theory, citizen journalism, media in China, and media coverage of food safety issues, has been reviewed. Weaving these ideas together for the purposes of this study, this study aims to applying the agenda-setting theory to an analysis of traditional media discourses and online public discourses surrounding the tainted milk formula scandals in China.

Agenda-setting theory holds two fundamental assumptions: 1) people get their news from a finite number of news sources or media outlets; 2) people are influenced by media (McCombs, 2004, 2005). However, in the new media environment, there are numerous channels that people can access to obtain information; different media platforms may have very different perspectives when reporting the same issue; messages received by people are more likely to be individually tailored and actively chosen by the audience (Chaffee & Metzger,

2001). As the number of news outlets increases, public attention scatters, and personalized agenda develops, it is possible that, in place of a collectively shared agenda, fragmented and competing media agendas, and therefore diverse public agendas, will emerge (Chaffee & Metzger, 2001). The tainted milk formula incidents in this study were of great social importance and controversy. Due to the development of online news sites, social network sites, and citizen media, as well as the individualized patterns of media consumption in China, it was expected that there would be diverse online discourses over the issue, as people develop various individual agendas and express different viewpoints about the tainted milk.

Previous researchers have tracked the news stories most often linked to by bloggers (issue salience) and compared the results to stories favored by traditional media, determining that bloggers constructed an alternative agenda within the blogosphere (Delwiche, 2005). Given the growth of online media in China and the different characteristics and functions of traditional media and new media, it was predicted in this study that newspaper agenda about the tainted milk formula representing government and traditional media would not be the same as the public agenda about the tainted formula on discussion forums and blogs. The public may present their own view of what news matters, playing the role of opinion leaders in constructing public discourse (Delwiche, 2005). In this way, the traditional agenda-setting model can be modified by inserting Internet users, no matter forum discussion participants or bloggers, between the public and the press as opinion leaders (Delwiche, 2005). Comparing agendas from discussion

forums, blogs, and newspapers about the tainted milk formula helps the researcher to find out the agenda-setting effects of each medium, investigating their roles in shaping the discourses about the public health crisis.

Further, the public may actively interact with media in placing issues on the daily agenda (Zhou & Moy, 2007). The interplay of the public agenda and media agenda changes the focus of agenda-setting theory from what issues the media tell people to think about to what issues people tell the media they want to think about (Chaffee & Metzger, 2001). By examining sources in newspaper articles, online forum posts, and blog post, about tainted milk formula scandals, the way how online public opinion made the original event a prominent one in traditional media and heard by the mass population, as well as the way how mainstream newspapers influence the ongoing online discussion about the incidents, can be outlined. With all these considerations, the agenda-setting theory and the notions of citizen journalism, media in China, and public health coverage were put into a systematic investigation in this study.

The Present Study

This study analyzes the discourses related to the tainted milk formula scandals in Chinese newspapers, online forums, and blogs. The general research questions for this study are: What role did new media play in China during a public health crisis, the tainted formula scandals, from 2008 to 2011? How was it different from or related to the function of traditional media in China? Were the public discourse and the government/media discourse about the tainted formula incidents in China the same? Who were the agenda setters?

Below is the proposed framework for research, to compare public discourse and media/government discourses (Figure 2-1).

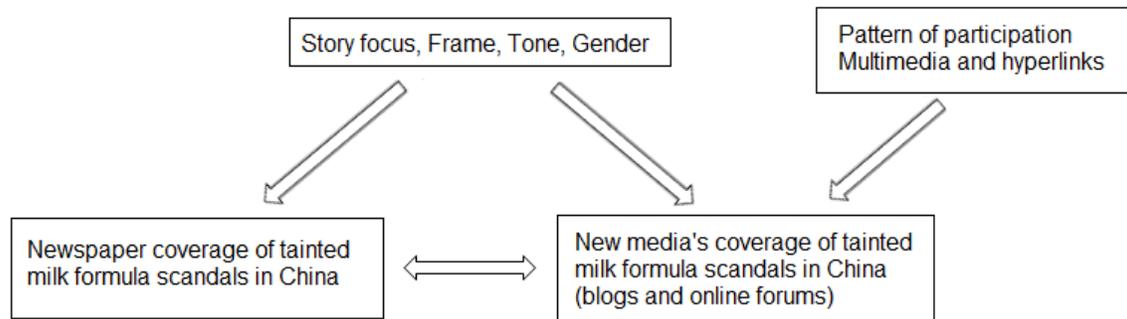


Figure 2-1. Proposed framework for study

Conceptual Definitions

Applying agenda-setting theory to the research, this study focused on several aspects of agenda setting: story focus (topic attribute), frame, tone (affective attribute), source, the pattern of participation and multimedia use. Story focus is the subject matter most emphasized by media concerning the formula scandals (Nucci, Cuite, & Hallman, 2009). The choice of story focus and the amount of coverage for different story focus are major indicators of issue salience. Frames are basic cognitive structures that guide the representation and perception of reality (Entman, 1993). Audiences use the explanations given by media/bloggers—their selection and presentation of information—to understand complex issues and make decisions on their own (Entman, 1993; Gamson & Modigliani, 1989). Different frames may perform different functions such as defining problems, diagnosing causes, making moral judgments, and suggesting remedies (Entman, 1993).

Conceptually speaking, tone is the quality and modulation of the words depicting the tainted formula incidents with the potential to show the

communicator's inner feeling, meaning, or judgment on the issue. Source refers to those who are quoted in articles, discussion forums, and blogs. Information in media is collected from various sources, which are believed to influence media content in tremendous, and sometimes subtle, ways. The patterns of participation in online forums and blogs include two dimensions, interactivity and deliberation. Interactivity is the responsiveness and communication among forum users or between bloggers and readers, while deliberation is the way forum users and bloggers incorporate and rebut others' opinions, and justifying their own arguments.

Research Questions

This study is aimed at analyzing the discourses surrounding the milk formula scandals in Chinese newspapers, online forums, and blogs, gaining insights into the growing contributions and importance of new media, and exploring the implications for journalistic practice and public sphere development in China. Based on agenda-setting theory and the concrete theoretical constructs in the reviewed literature, research questions were proposed.

Story focus, or issue attribute, is an important variable to analyze in second-level agenda-setting research. It is important to know what attributes of the issue, the tainted milk formula scandals, were emphasized in newspapers, discussion forums, and blogs. So the story foci in different media's coverage of the tainted formula scandals were examined and compared. In addition, there could be several issues or foci being mentioned in a single article or post. However, there was only one major focus, which was the dominant theme of the story. It was

interesting to see which foci were mentioned in the story and what the major focus was. Thus, the following research questions were posited:

RQ1: What were the story foci in the online forum posts, blog posts, and newspapers in China concerning the tainted formula scandals?

RQ1a: What was the major focus in each online forum post, blog post, and newspaper article?

RQ1b: How did story foci and major focus differ across newspapers, online forums, and blogs?

Frame is another variable that is linked to second-level agenda-setting studies. When covering the tainted milk formula scandals, the presentation of frames by newspapers and bloggers may reflect their understanding of the issue and the priorities they think should be emphasized. Similar to story focus, the story frame also could change over time. To understand the framing of the tainted milk formula scandals in newspapers and blogs, the following research questions were asked:

RQ2: What frames appeared most frequently in the formula-scandal-related newspaper articles and blog posts?

RQ2a: What were the dominant frames in blog posts and newspapers?

RQ2b: How did framing differ between newspaper and blog coverage of the formula scandals?

Tone is an important factor to influence the presentation and perception of the issues. As for the tainted milk formula scandals, it is necessary to analyze the major tone of the formula-scandal-related content in newspapers, blogs and online public forums, examining whether there are differences between media. So, the following research questions were proposed:

RQ3: What were the major tones of the online forum posts, blog posts, and newspapers concerning the tainted formula scandals?

RQ3a: How did tones differ among newspapers, online forums, and blogs?

Sources could exert tremendous influence on the process of agenda setting. The sourcing patterns of media in China during the public health crisis are a point of interest in the study. Considering inter-media agenda-setting effects, how citizen media and mainstream newspapers cite each other may provide a way for the researcher to define the roles of old and new media in China. Therefore, to uncover the common sources used in newspapers, blogs and online forums concerning the tainted formula scandals and the differences in sources among newspapers, blogs and forums, the following research questions were outlined:

RQ4: What were the most frequently cited sources in the online forum posts, blog posts, and newspaper articles when covering the tainted formula scandals?

RQ4a: How did sources differ among newspapers, online forums, and blogs?

One of the most significant features of new media is participation, which include two dimensions, interactivity and deliberation. Interactivity refers to the responsiveness and communication among users, while deliberation is the way users recognize, incorporate, and rebut the arguments of others as well as justifying their own arguments (Kiousis, 2002). More specifically, the researcher was interested in the responsiveness and the homogeneity of discussion in Chinese new media about the tainted formula scandals, answering questions such as: Did stories of particular story foci, frames, or tone generate more

discussions—receiving more reader comments in blogs or having more posts/threads in forums? Did Chinese people really participate in online discussions? Or did most of them just read blogs/forums while not contributing? For those online discussion participants, how active were they? In the discussions, were there many opposing views? Or were most opinions about the issue homogeneous? To find answers, following research questions were asked:

RQ5: What were the patterns of participation in new media?

RQ5a: What stories (story foci, frames, tones) generated more discussion?

RQ5b: What was the homogeneity of discussion in online forums and blogs?

In new media, multimedia and hyperlinks, if used appropriately, can attract more readers. The employment of multimedia and hyperlinks is another indicator of Chinese Internet users' familiarity with new technologies. It is interesting to look at how multimedia such as pictures, audio, and video were embedded in blogs and forum posts; and how internal hyperlinks and external hyperlinks to various sources (i.e., newspapers, TV, news agencies, other blogs, online forums, government/health agency sites, etc.) and to different types of content (i.e., texts and multimedia content) were included in blog posts and forum threads. So, the following research questions were proposed:

RQ6: How were multimedia and hyperlinks employed in blogs and online forums?

RQ6a: How many pictures were embedded in each blog post/forum thread?

RQ6b: How many audio or video clips were embedded in each blog post/forum thread?

RQ6c: How many hyperlinks were included in each blog post/forum thread?

Last but not least, characteristics such as the gender and background of authors may influence the content (i.e., story focus, frame, tone, and source). Because participants in online discussion forums are anonymous, only the authors of newspaper articles and blogs will be analyzed. Yet, could the characteristics and background of authors influence the coverage of the tainted formula scandals in Chinese newspapers and blogs? Did different types of bloggers (i.e., parents, health experts, journalists, average citizens) play different roles in the agenda-setting process? For example, were health expert blogs more likely to be agenda setters? Were parent bloggers more likely to be agenda followers? To find answers, the following research questions were suggested:

RQ7: How did authors influence the coverage of the formula scandals in newspapers and blogs?

RQ7a: Did the gender of authors influence the content of blog posts and newspapers?

RQ7b: Did the type of blogger (health expert, parent, journalist, citizen) influence the content of blog posts?

CHAPTER 3 METHODS

Content Analysis

This study was aimed at examining the role of new media in China by analyzing the story focus, frames, tones, sources, discussion patterns, hyperlinks and multimedia employed by newspapers, public forums, and citizen blogs when covering the tainted milk formula scandals. Quantitative content analysis was used as the research method.

Content analysis is defined as:

the systematic and replicable examination of symbols of communication, which have been assigned numeric values according to valid measurement rules and the analysis of relationships involving those values using statistical methods, to describe the communication, draw inferences about its meaning, or infer from the communication to its context, both of production and consumption (Riffe, Lacy, & Fico, 2005, p. 25).

Neuendorf (2002) pointed out that content analysis is “a summarizing, quantitative analysis of messages...which is not limited to the types of variables that may be measured or the context in which the messages are created or presented” (p. 10). To examine the information being disseminated by newspapers, public forums, and blogs during a public health crisis in this study, content analysis was chosen as an appropriate research method because it is “particularly well suited to the study of communications and to answer the classic question of communication research: ‘Who says what, to whom’ ... and ‘how’...” (Babbie, 2007, p. 320). Lombard, Snyder-Duch and Bracken (2002) stated that content analysis, as a method specifically for the study of messages, is fundamental to mass communication research. The strength of content analysis lies in its unobtrusiveness, although, as a research method, it is basically

descriptive and limited by the availability of material (Riffe, Lacy, & Fico, 2005, p. 25). Nevertheless, ample related studies and abundant first-hand data for analysis may help to overcome the weakness of content analysis, and better building theoretical assumptions and predictive power for this study.

Sampling

Newspapers, online forums, and blogs were the major media platforms chosen for this study. They are all very popular forms of communication where news and information is disseminated. Newspapers represent traditional mass media, while online forums and blogs represent new media as alternative ways for Chinese citizens to gather information and express opinions. Regardless of Internet censorship, it is undeniable that Chinese citizens have been enabled by online media such as the online forums and blogs to express their opinions more freely. The time frame for the study was from May 2008, when the problem of the milk formula was first revealed by parents online, to June 2011. The three-year research frame allows for a comprehensive observation of the milk formula scandals coverage in the time sequence from the exposure of the problem to the time that the topic died down.

Newspaper Sampling

Eight newspapers were selected: 1) the *People's Daily*, 2) the *Beijing Youth News*; 3) the *Southern Metropolitan News*, 4) the *Oriental Morning Post*, 5) the *Xinmin Evening News*, 6) the *Changjiang Daily*, 7) the *Chutian Metropolis Daily*, and 8) the *Hebei Daily* (Table A-1). All of them are in Chinese.

With 2,350,000 in circulation, the *People's Daily* is a national daily newspaper that provides comprehensive daily coverage of domestic and

international news and events (Willings Press Guide, 2009). It is the most authoritative newspaper and the CCP's party "throat and tongue" in China, which can be understood as the voice of the government, as its story selection, editorial choice, and photo placement reflect the politics of the central government (China Media Guide, 2008). The *People's Daily's* Chinese-language website covers an extensive range of topics and lists news feeds from news organizations across the country (China Media Guide, 2008).

Published since 1951 and led by the Chinese Communist Youth League committee, the *Beijing Youth News* is one of the most influential newspapers among younger Chinese audiences aged 21 to 48 years old (Press Reference, 2010; Willings Press Guide, 2009). With a circulation of 680,000, it provides in-depth and comprehensive news and feature coverage of domestic and international events (Willings Press Guide, 2009). In the late 1990s, the *Beijing Youth News* changed from a daily broadsheet with eight pages to 46 pages (Press Reference, 2010). It is famous for its "Freezing Point" ("*bingdian*" in Chinese: 冰点), a commentary-based editorial column, which often pushes the boundaries of what's allowed by the authorities (China Media Guide, 2008).

The *Southern Metropolitan News* is a daily newspaper known for its investigative journalism and provocative commentary (China Media Guide, 2008). It was the leading newspaper in reporting on SARS and the Zhigang Sun beating case, which led to the repeal of the forced repatriation law in the end (China Media Guide, 2008). With a circulation of 1,580,000, the *Southern Metropolitan News* is among the metro daily newspapers of highest circulations

(Willings Press Guide, 2009). The *Beijing Youth News* and the *Southern Metropolitan Daily*, although one is from the north and the other from the south, were chosen for this study because both of them are considered the most aggressive newspapers in China (China Media Guide, 2008).

The *Changjiang Daily*, with a circulation of 400,000, focuses on local (Hubei Province), domestic and international news covering a wide range of topics (Willings Press Guide, 2009). Established in 2003, the *Oriental Morning Post* is a comprehensive daily covering 15 cities in the Yangtze River delta with a targeted audience of well-educated people aged between 30 to 35 years and with a fairly good income (East Day, 2003). The *Changjiang Daily* and the *Oriental Morning Post* were chosen because they were among the earliest Chinese newspapers to report on the tainted formula scandals, with the latter being the first newspaper to link the tainted formula to Sanlu Company.

First published in 1929 and with a circulation of 1,100,000 now, the *Xinmin Evening News* is a regional daily newspaper that reports on international and national news, including economic, business, culture and entertainment developments (Willings Press Guide, 2009). Its content is softer than party newspapers but harder than metro tabloids (Huang, 2001). The *Chutian Metropolis Daily* is a metro tabloid based in Hubei Province with a circulation of 1,300,000 that provides general news (Willings Press Guide, 2009). Its tenets are “consider what people consider; worry about what people worry about; give what people need; solve the problems people have.” The *Xinmin Evening News* and

the *Chutian Metropolis Daily* were chosen to represent different types of metro newspapers and newspapers from the east and the west.

With a circulation of 410,000, the *Hebei Daily* is a party newspaper reporting on domestic and international news and events with emphasis on provincial news coverage. The *Hebei Daily* was selected because Hebei is the province where the Sanlu Company is located. When the milk formula scandal was first exposed online, the Sanlu Company decided to cover it up in order to protect the brand. The local government, the Shijiazhuang city government and the Hebei provincial government, were also informed about the problems very early. But local authorities helped to cover up the matter because Sanlu is an important company to provide employment and tax income for the city (Zhao & Lim, 2008). The *Hebei Daily* was used to show a local perspective on the issue.

All of the newspapers have archives of news stories from 2005. With the story archives available on newspaper websites, the keywords “tainted formula” (*wenti naifen* in Chinese: 问题奶粉) and “poisoned formula” (*du naifen* in Chinese: 毒奶粉) were used for searches of formula-scandal-related articles because they were the most widely accepted labels that Chinese newspapers designated for the formula incidents. Some other words were tested as search terms in the pre-test of the study. For example, “infant formula” was tried as keywords. But the search with “infant formula” generated too many stories that were unrelated with the tainted formula scandals. “Sanlu,” the company name of the biggest tainted formula producer in the scandals, was also tested. However,

Sanlu was, although the biggest, not the only dairy company involved in the scandals. The nationwide investigations of infant formula carried out by the government in later 2008 revealed that many dairy companies in China had illegally added melamine to their products. Consequently, newspaper coverage of the scandals after the investigation was not only about Sanlu. Using “Sanlu” as the keyword for search might have resulted in an incomprehensive search of qualified formula-scandal-related stories.

All the articles identified through searches on the selected newspapers' online archives from May 1, 2008, to June 1, 2011, were indexed as the population of the study. However, stories with less than 400 words, story compilations, duplicates, and Q&As were excluded from the final population for sampling, because such stories were not long enough to examine the standing of the newspapers on the issue or would cause sampling problems. Consequently, there were 77 articles about tainted formula scandals from the *People's Daily* in the final population, 72 from the *Beijing Youth*, 83 from the *Southern Metropolitan News*, 102 from the *Oriental Morning Post*, 68 from the *Xinmin Evening News*, 76 from the *Changjiang Daily*, 64 from the *Chutian Metropolis Daily*, and 65 from the *Hebei Daily*. Then, 50 articles were randomly selected from the population of each newspaper. The final sample for newspaper analysis was 400 articles from eight major Chinese newspapers, which allowed the researcher to build a comprehensive outlook on newspaper coverage on the milk formula scandals. The unit of analysis was each news story.

Forum Sampling

Five online public forums were selected for this study: Tianya Forum (<http://www.tianya.cn/>), Sina Forum (<http://bbs.sina.com.cn>), Sohu Forum (<http://club.sohu.com>), Qiangguo Forum (Qiangguo is literally strengthening the nation in Chinese) (<http://bbs1.people.com.cn/>), and Xinhua Forum (<http://www.xinhuanet.com/forum/index.htm>) (Table A-2).

Launched in March 1999, Tianya had more than 30 million registered users by early 2010 and ranked 18th in the country's most visited websites (from Alexa.com). Attracting more than 1.5 million pages views per day, Tianya is among the most popular online public forums in China, although it is always filled with random talks. Tianya forum has generated many controversial and influential online discussions, attracting huge public attention and media exposure. Moreover, Tianya was the first online media platform on which the Sanlu formula scandal was disclosed, causing a surge of online discussions over the scandals. The popularity and its swift reaction to the incidents made it an ideal subject for this study. Sina and Sohu are among the first and the most popular market-oriented commercial Web portals, similar to Yahoo in the United States (Harwit & Clark, 2001). They ranked 4th and 8th on the list of most visited websites in China (from Alexa.com), having features such as email, news, and public forums. All three online public forums mentioned above are independent, while the last two are attached to news organizations. Established by the *People's Daily*, China Communist Party's party newspaper, one day after NATO's bombing of the Chinese Embassy in 1999, Qiangguo Forum is the most famous and probably the most popular political discussion forum (Yang, 2003). Its loosely controlled

forum atmosphere, the endorsement it has from the *People's Daily*, and its focus on current domestic and foreign events have made the forum a hotbed for Chinese Internet users (Li, Xuan & Kluver, 2003; Harwit & Clark, 2001). Hosted by Xinhua News Agency, the major news agency in China, Xinhua Forum is another popular online public forum for Chinese.

Using the search terms “tainted formula” (*wenti naifen*, in Chinese: 问题奶粉) and “poisoned formula” (*du naifen*, in Chinese: 毒奶粉), threads in online discussion forums from May 1, 2008, to June 1, 2011, that had a theme of the tainted formula incidents were used as the population of forum posts sample. Off-topic threads, duplicates, and threads with fewer than 10 posts were excluded from the sample to allow for in-depth analysis. Consequently, 7797 threads from Tianya forum, 984 threads from Sina forum, 863 threads from Sohu forum, 353 threads from Qiangguo forum, and 179 threads from Xinhua forum were included in the population for sample selection. The final sample for forum study was 200 threads from the five discussion forums, with 40 threads randomly selected from each one. The unit of analysis was each thread with at least 10 posts.

Blog Sampling

The final sample of blogs consists of 80 blogs, with 20 blogs maintained by health experts, 20 by parents, 20 from journalists, and 20 from citizens. Generally speaking, health expert blogs are blogs that deliver health information and comments on health issues (i.e. the tainted formula incidents) from a professional health perspective, and are written by health experts such as doctors, pediatricians, etc. Parent blogs refer to those blogs maintained by individuals

who self-identify as parents and commonly made their children or parenting the focus of their blogs. They wrote about the tainted formula on the basis of their parent status. Journalist blogs are online diaries or journals maintained by professional reporters to post news or commentary about current events (i.e. the tainted formula scandals) on either newspaper websites or blog portals. Citizen blogs are blogs published independently by citizens for self-presentation, self-expression, and conversations with others.

For this study, each qualified blog had to have started prior to May 1, 2008, when the first formula scandal was revealed online by parents. Also, each blog had to include more than five blog posts with a theme of the tainted milk formula incidents from May 1, 2008, to June 1, 2011. Only blog posts with more than 50 words were used to allow for in-depth and inclusive analysis. For the selection of health expert blogs, both the popularity of the blogs and the credibility of health expert bloggers were considered. When choosing blogs from parents, journalists and citizens, both the popularity of the blogs and the depth of blog coverage on the tainted formula scandals were taken into consideration.

There is no directory of blogs based on popularity or area available. Given the huge number of Chinese blogs maintained by health experts, parents, journalists, and citizens, as well as the aim of this research to study the tainted milk formula coverage in the most popular blogs or at least in blogs with a big audience base, the search of qualified blogs was conducted in several ways. First, there were several major blog portals in China including Sina Blog, Sohu Blog, NetEase Blog, Hexun Blog, etc. Some of them, such as Sina Blog and

NetEase Blog, have lists of the most popular/most read blogs on their websites. So the 300 most popular blogs were pooled from the two blog portals individually. Among those most read and highly rated Chinese blogs, the keywords “tainted formula” (*wenti naifen*, in Chinese: 问题奶粉) and “poisoned formula” (*du naifen*, in Chinese: 毒奶粉) were used to search within each blog to decide whether it would be a qualified blog. In addition, the blog roll—a list of blogs that the blogger frequently read or link to—on those most popular blogs were also examined to find suitable blogs for the study. Then, for the other two big blog portals, Hexun Blog and Sohu Blog, although there were no rankings of popular blogs on their websites, they recommended blogs for readers and named top bloggers for different sections such as politics, economics, health, lifestyle, entertainment, etc. For example, Sohu listed many blogs maintained by famous doctors on the website’s health section and promoted them on the front page. After a keyword search using “tainted formula” (*wenti naifen*, in Chinese: 问题奶粉) and “poisoned formula” (*du naifen*, in Chinese: 毒奶粉) within each recommended health blog, parent blog, journalist blog, or citizen blog on the two sites, qualified blogs were pooled into the population.

Moreover, for parent blogs, some parenting websites were examined to find more qualified parent blogs, such as blogs (<http://blog.ci123.com>) on Yuer (literally “parenting,” in Chinese: 育儿), a website specifically providing parenting information. Journalist blogs are sometimes hard to recognize on blog portals unless the j-bloggers identify themselves as journalists. To make the study more comprehensive, the researcher examined journalist blogs from the websites of

the eight newspapers selected for this study (if they had any on the sites), using the keywords “tainted formula” (*wenti naifen* in Chinese: 问题奶粉) and “poisoned formula” (*du naifen* in Chinese: 毒奶粉) to search for qualified journalist blogs.

Admittedly, there was no way to tell which journalist blogs had the largest following. Thus, those journalist blogs that started earlier, with a higher number of posts in their history, or with a higher number of posts concerning the tainted milk formula scandals were given the priority during the selection.

Through the methods mentioned above, 68 health expert blogs, 77 parent blogs, 72 journalist blogs, and 84 citizen blogs were chosen to serve as the population for the study. Twenty blogs were randomly selected from the population of each blog type, resulting in 80 blogs for analysis. Then, five posts were randomly chosen from each of the 80 blogs. So the final sample for the blog study was 400 blog posts. The unit of analysis was each blog post.

Overall, the final sample of 400 newspaper articles, 200 forum threads, each with at least 10 posts, and 400 blog posts allowed the researcher to build an extensive understanding of the discourses surrounding the milk formula incidents in China.

Variables

Based on the literature review and an initial assessment of the Chinese newspaper and blog coverage as well as the public discussions in Chinese online forums concerning the tainted formula scandals, the following variables and coding schemes were developed.

Story focus: Based on the previous literature (Nucci, Cuite, & Hallman, 2009) and a pilot examination of formula-scandal-related content in Chinese media, the story focus variable was comprised of infected symptoms, information on spread of the incidents or infection (infected/deaths/confirmed cases), dairy products identified as contaminated, formula recall, guidelines for handling the tainted formula, guidelines for seeking medication/hospitalization, compensation to victims, new regulations and food/milk monitoring system, the economic influence of the incidents/recall, health or medical issues related to food safety/formula scandals, the political influence of the incidents/recall, possible causes for the incidents, problems of the food industry or government agencies, potential responsibility takers, actions by government or health agencies, actions taken by dairy companies, actions by individuals, actions taken by hospital, and others (examples for each story focus in Appendix C, Appendix D, and Appendix E). Any of the above foci that appeared in each story/post was coded for presence/absence.

A factor analysis was later employed to categorize the 19 story foci into five constructs (This process will be discussed in Chapter 4 in detail), including 1) a description of the formula scandals, 2) solutions, 3) influence of the incidents (internationally and nationally), 4) investigation of the incidents, 5) action. From the five categories, one was chosen as the major story focus for each story.

Frame: Based on previous framing research (Dill & Wu, 2009; Luther & Zhou, 2005; Nisbet, Brossard, & Kroepsch, 2003; Shih, Wijaya, & Brossard, 2008) and a pilot examination of formula-scandal-related content in Chinese

media, frames for this analysis included: 1) an attribution of responsibility frame, which attempts to blame the issue on the government, the dairy companies, or other stakeholders; 2) a severity frame, which reports on the spread of the tainted formula contamination, for example, the infected/deaths/confirmed cases; 3) a conflict frame emphasizing conflicts between individuals, companies, victimized groups, and the government; 4) an economic consequence frame, which talks about the possible economic losses for the individuals, companies, the dairy industry or the country due to the formula scandals; 5) a reassurance frame, which tells the public they do not need to worry or should be less worried about the formula scandals or food safety issues in China; 6) an action frame, which emphasizes any action taken by stakeholders such as the dairy companies, the government or individuals, to deal with the formula scandals, including formula recalls, compensation, punishment, hospitalization of sickened children; 7) an uncertainty frame that describes uncertainties in any aspect of the issue, including the cause, the cure, the possible spread; 8) others (examples for coding in Appendix C, Appendix D, and Appendix E). Because it is possible that there was no frame in a story, especially in a blog post, 9) none was added to the coding categories. All the frames that appeared in the story/post as well as the most dominant frame in the story/post were coded for their presence.

Tone: Tone was determined based on whether subjective judgment on the issue appeared in the article and what that major judgment was. For newspapers and blogs, tone was categorized as 1) toward government: negative, neutral/mixed, positive, or no tone (void of judgment, only statements of facts); 2)

toward the dairy company: negative, neutral/mixed, positive, or no tone (Shannon, 2006). In each category, only one option was allowed. For online forum threads, the number of posts (original entry and responses) in each thread that qualify for each tone category—favorable to government, unfavorable to government, favorable to dairy companies, unfavorable to dairy companies, neutral/mixed opinion(s), no tone presented—was counted.

Source: Sources were classified into 11 types: 1) state/local government/agency or its officials; 2) health agencies or their officials, such as the Chinese Center for Disease Control and Prevention (CCDC), the State Food and Drug Administration of China (SFDA), the General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ), the Ministry of Health, or other food or health related institutions; 3) non-government organizations (NGOs), other independent organizations, or their officials; 4) health experts such as doctors/nurses/pediatrician, professors/researchers, food/nutrition experts, etc. that were not associated with the three types of agencies mentioned above; 5) hospitals or their officials; 6) dairy companies, their spokespersons or lawyers, etc.; 7) victims' parents, families, lawyers, etc.; 8) other citizens, witnesses, etc.; 9) newspapers, TV stations, magazines, or news agencies such as the Xinhua News Agency, and their websites; 10) Blogs, online forums, independent online news sites, or other citizen media; 11) others. Coders counted the number of sources from each category in each newspaper article, blog post, and forum thread. If a source, such as a pediatrician, appeared several times in a story, it would be counted only once.

Responsiveness of discussion: For blogs, the responsiveness of discussion was measured by the interactivity between bloggers and readers. More specifically, it was measured by the number of reader comments and bloggers' responses to each blog post as well as the ratio of reader comments to bloggers' responses. For online forum threads, the responsiveness of discussion was measured by the total number of replies in a thread. A related concept with responsiveness of discussion was the unresponsiveness of discussion. Periphery participation (Wu, 2008) was used to show unresponsiveness of discussion, by calculating the ratio of hits and replies for each thread. Number of hits and replies can be found in each thread on all the Chinese online forums selected for this study.

Homogeneity of discussion: For blogs, homogeneity of discussion was measured by the number of reader comments in each of the following categories, including 1) comments supportive or similar to viewpoints in the blog post; 2) comments that mention or propose different or opposite idea(s); 3) neutral comments that neither support nor oppose, or mixed comments that both support and oppose; 4) off-topic comments such as ads; 5) others. For online public forums, based on previous studies (Zhou, Chan, & Peng, 2008), homogeneity of discussion was about how the following-up posts replied to the initial entry in each thread, even if it was not a direct reply to the initial entry (i.e. it replied to the second or third entry). So, the homogeneity of discussion in Chinese online forums was measured by the number of follow-up posts or replies in each of the following categories: 1) posing any argument(s) to support the viewpoints in the

initial entry; 2) proposing any different or opposite idea(s) to the initial entry; 3) mention neutral or mixed points of view; 4) bringing in new information/topic that is related to what's in the initial entry; 5) off-topic replies such as ad; 6) others.

Multimedia: In online forums and blogs, the use of multimedia was measured by the number of embedded videos, embedded audio, and embedded photos in each thread and each blog post.

Hyperlink: In online forums and blogs, the number of hyperlinks and the type of hyperlinks were measured. Based on their destinations, hyperlinks were identified as: 1) internal hyperlinks that was to the site hosting the blog post/thread in analysis; 2) external hyperlinks to legacy news sites (newspaper, TV, news agency); 3) external hyperlinks to online news sites (Sina, Sohu, etc.) and citizen journalism sites (blogs, online forums, etc.); 4) external hyperlinks to government/health agency sites; 5) external hyperlinks to others (please specify). In addition, hyperlinks were categorized based on the form of hyperlinked content, including 1) hyperlinks to only multimedia content (i.e. photos, videos, audio); 2) hyperlinks to only texts; 3) hyperlinks to multimedia and texts together. The number of hyperlinks in each type was counted for every blog post and forum thread.

Gender: Gender of the writers may have an influence on the stories of tainted milk formula. In most cases, gender of news authors can be judged based on their names. For bloggers, sometimes they reveal their gender in the profiles, pictures, or blog content. However, in some cases there is no clue to the gender of the reporter or the blogger. So, in addition to male and female, one category—

unknown (cannot discern) or no author listed—was added to analysis. For newspapers, sometimes their stories are from news agencies (i.e. the Xinhua New Agency). Thus, another category—news agency—was listed for newspaper analysis. In addition, there could be several authors in a newspaper article. In that case, only the gender of the first author was coded. For discussants in online forums, it is very difficult to tell their gender. So, online forums were excluded from coding on this variable.

Intercoder Reliability

In spring 2011, two graduate students in a southern university who are fluent in Chinese coded 20% of newspaper articles, forum threads, and blog posts in the final sample that were randomly selected to develop intercoder reliability. One of the coders was the researcher. A pretest of the codebook, a training session and a trial coding were carried out first. Disagreements in the trial coding were then discussed between the coders, and the codebook was improved. After that, two coders each coded 80 newspaper stories, 40 forum threads, and 80 blog posts. The intercoder reliability was evaluated using Krippendorff's alpha, for which a coefficient of .80 or greater is acceptable in most cases (Neuendorf, 2002). The reliability for each variable was reported in Table B-1.

CHAPTER 4 RESULTS

In this chapter, the results of data analysis are reported so as to answer all the research questions. Descriptive statistics, chi-squares, T-test, and one-way ANOVA analyses were performed and explained.

In total, 400 newspaper articles, 400 blog posts, and 200 forum threads were coded. Most newspaper stories (79.8%) were news-reporting articles; 5% of them were letters from readers; 8% were opinion columns by staff journalists or other people; 4% were editorials; and 3% were feature articles. There were several periods of time in which the number of newspaper articles about tainted formula was higher. For example, from August 2008 to January 2009—right after the break-out of the 2008 Sanlu tainted formula scandal. Or from late 2009 to August 2010, when the illegal reuse of material from the 2008 adulterations as well as the dairy products polluted by a carcinogenic protein derived from leather were revealed. It seems that newspaper coverage was fairly event-driven.

Among the 400 blog posts about tainted formula scandals, 100 were from health experts, 100 from parents, 100 from journalists, and 100 from citizens. For the 200 forum threads coded, most of them (44.0%) were from the talk/conversation/gossip section in the forums; 13.5% were from the news section; 13.0% were from the politics/public affairs/law section; 8.0% from the health section, 7.0% from the parenting/education section, 7.0% from the economics section; few of them were from the region section (3.0%) or food/lifestyle section (1.0%). All the forum threads were selected from the five popular Chinese online forums, among which Tianya was the one with the most

active discussion about the tainted formula scandals, while Xinhua—the online forums attached to the news agency—was the one with the least active discussions. Moreover, in blogs and discussion forums, it was found that, similar to newspaper coverage, when the tainted formula scandals were first revealed, the discussion in blogs and forums were the most vigorous.

Story Focus

The first set of research questions probed for the story foci and the major focus of tainted formula coverage in newspapers, blogs and online discussion forums. More specifically, these research questions looked at what attributes of the issue—the tainted milk formula scandals—were covered as story foci in newspapers, discussion forums, and blogs; and what story focus was emphasized as the dominant theme or the major focus in each story.

To classify the story foci in the coverage of the tainted formula incidents, a principal axis factor analysis with varimax rotation on the 19 items was conducted. As a result, the initial items were first integrated into six summative constructs. The rotated component matrix of constructs with respective items for story foci is listed in Table 3-1. Cronbach's alpha and corrected item-total correlations were calculated to determine the internal consistency of each construct emerging from the factor analysis. For description, Cronbach's alpha was .77; for solutions, Cronbach's alpha was .70; for influence, Cronbach's alpha was .77; for investigation, Cronbach's alpha was .95, thus these four constructs were over the standard of .70 for acceptable reliability (Babbie, 2007). For the remaining items, the corrected item-total correlation was .423 for "actions by government/health agencies" and "actions by dairy companies" and .415 for

“actions by individuals” and “actions by hospital,” exceeding the satisfactory level of .40 (Babbie, 2007). However, most actions mentioned in the tainted formula stories were initialized by the government, health agencies, or dairy companies, while only few stories had “actions by individuals” and “actions by hospital” as story foci. So the last two items were dropped for later analysis. Consequently, five story foci were retained, including a description of the tainted formula incidents, solutions, influence of the incidents, investigation of the incidents, and actions, explaining a total of 59.16% of the variance (Table 3-1).

As shown in Table 3-2, the most frequent focus was actions (81.8%), followed by incident description (48.3%), solutions (46.0%) and investigation (41.3%). The influence of the tainted formula incidents was the least covered in newspapers (35.0%). In blogs, actions appeared most frequently (69.8%), followed by description (57.8%), influence (47.5%), investigation (42.5%), and solutions (33.0%). Similar to blogs, online discussion forums also had actions as the most presented story focus (73.0%), followed by description (64.0%), investigation (52.5%) and influence (32.0%). Solutions (28.0%) was the least likely to appear in forum discussion about tainted formula incidents.

A chi-square analysis revealed that there were significant differences across newspapers, blogs, and forums for the presence of each story focus (Table 3-2). Although action was the most frequently appearing story focus among media, it seems that newspapers in China were more likely to talk about it than other media. Newspapers were also more likely to mention solutions in their coverage of the tainted formula, but least likely to describe the tainted formula

incidents, compared to blogs and online forums. In contrast, incident description and investigation were more likely to be included in forum discussions. Blogs were found to talk more about the influence of the scandals.

Table 3-1. Rotated component matrix for factor analysis of story foci in the coverage of the tainted formula incidents

Story Focus	Component					
	1	2	3	4	5	6
A description of the incidents						
Infected symptoms	.635					
Spread of the incidents	.754					
Dairy products contaminated	.757					
Solutions						
Formula recall		.775				
Guidelines for handling the tainted formula		.774				
Guidelines for seeking medication/hospitalization		.407				
Compensation		.588				
New regulation or system		.560				
Influence						
Economics of the incidents			.727			
Health issues of the incidents			.751			
Politics of the incidents			.666			
Investigation						
Possible causes of the incidents				.922		
Problems of the food industry/government				.895		
Potential responsibility taker(s)				.925		
Actions						
Actions by government/health agencies					.805	
Actions by dairy companies					.644	
Actions by individuals						.188
Actions by hospital						.573
Variance Explained	8.77%	17.17%	8.99%	17.20%	7.03%	4.73%
Eigenvalues	1.53	1.88	1.62	3.10	1.27	1.03

Extraction method: principal axis factoring. Rotation method: varimax with Kaiser Normalization. Rotation converged in 6 iterations.

Table 3-2. Story focus in the coverage of the tainted formula incidents

Focus	Newspaper (N=400)		Blog (N=400)		Forum (N=200)		χ^2 (df=2)	p
	Presence	Percent	Presence	Percent	Presence	Percent		
Actions	327	81.8%	279	69.8%	146	73.0%	16.09	.000
Description	193	48.3%	231	57.8%	128	64.0%	15.13	.001
Solutions	184	46.0%	132	33.0%	56	28.0%	23.53	.000
Investigation	165	41.3%	170	42.5%	105	52.5%	7.46	.024
Influence	140	35.0%	190	47.5%	64	32.0%	18.82	.000

Each focus that appeared in each story was identified for presence/absence and analyzed. It was possible for one story to have all five story foci. However,

with the above analysis only, it is hard to tell which story focus is the most important one or the theme of the article/post. To provide more in-depth analysis, the major focus in each story as the theme of the article/post was identified and analyzed. Table 3-3 shows that, in newspapers, action (33.8%) appeared most frequently as the major focus, followed by investigation (23.1%), solutions (16.8%), influence (13.3%), and description (13.3%). More blogs adopted investigation (28.2%), actions (20.6%), and influence (20.5%) as the major focus, while fewer blogs mainly focused on solutions (16.0%) and description (14.8%). More forum threads emphasized investigation (36.0%) and actions (25.0%) as the major focus. However, forum discussions were less likely to mainly focus on incident description (16.5%), influence of the tainted formula (11.5%), or solutions (10.5%) (Table 3-3).

Table 3-3. Major story focus in the coverage of the tainted formula incidents

Major Focus	Newspaper		Blog		Forum		χ^2	<i>p</i>
	Frequency	Percent	Frequency	Percent	Frequency	Percent		
Actions	135	33.8%	82	20.6%	50	25.0%	18.31	.000
Investigation	92	23.1%	113	28.2%	72	36.0%	11.35	.003
Solutions	67	16.8%	64	16.0%	21	10.5%	4.37	.112
Influence	53	13.3%	82	20.5%	23	11.5%	11.38	.003
Description	53	13.3%	59	14.8%	33	16.5%	1.52	.469
Total	400	100.0%	400	100.0%	200	100.0%	36.21	.000

Comparing the major focus in tainted formula coverage among newspapers, blogs, and forums, it was revealed that there were significant differences for actions ($\chi^2=18.31$, $p<.001$, $df=2$), investigation ($\chi^2=11.35$, $p<.01$, $df=2$), and influence ($\chi^2=11.38$, $p<.01$, $df=2$). Table 3-3 shows that newspapers were more likely to emphasize actions (33.8%) as the major focus than blogs (20.6%) and forums (25.0%); online forums were more likely to focus on investigation (36.0%) than blogs (28.2%) and newspapers (23.1%); blogs were

more likely to concentrate on influence (20.5%) when compared to newspapers (13.3%) and forums (11.5%).

Frame

The second set of research questions examined the frames and the dominant frames employed in the tainted formula scandals, comparing newspapers and blogs (There were no frames in online discussion forums). Frequency and chi-square analyses were performed to answer the questions.

As shown in Table 3-4, the most frequently presented frames in newspapers were the action frame (87.5%), severity frame (58.3%), conflict frame (52.0%), and attribution of responsibility frame (42.3%), while the economic influence frame (18.8%), reassurance frame (17.3%), and uncertainty frame (10.3%) were less likely to appear in newspaper coverage of the tainted formula scandals. In blogs, the most frequently appearing frames were the conflict frame (74.8%), severity frame (72.5%), action frame (71.5%), and attribution of responsibility frame (52.0%), followed by the uncertainty frame (16.3%), economic influence frame (10.0%), and reassurance frame (9.3%) (Table 3-4).

Table 3-4. Frames in the coverage of the tainted formula incidents

Frame	Newspaper (N=400)		Blog (N=400)		χ^2 (df=1)	p
	Presence	Percent	Presence	Percent		
Action frame	350	87.5%	286	71.5%	31.42	.000
Severity Frame	233	58.3%	290	72.5%	17.94	.000
Conflict frame	208	52.0%	299	74.8%	44.60	.000
Responsibility Frame	169	42.3%	208	52.0%	7.63	.006
Economic frame	75	18.8%	40	10.0%	12.44	.000
Reassurance frame	69	17.3%	37	9.3%	11.14	.001
Uncertainty frame	41	10.3%	65	16.3%	6.26	.012
Others	5	1.2%	2	0.5%	--	--

Note: If any cell is less than 5, the chi-square analysis is not performed for the variable.

Significant differences were revealed between newspapers and blogs in the frames they adopted to cover the tainted formula scandals. Newspapers were significantly more likely to employ an action frame, economic influence frame, and reassurance frame. Blogs were more likely to use the severity frame, conflict frame, attribution of responsibility frame, and uncertainty frame.

To better understand the coverage of tainted formula scandals, the most dominant frame in each newspaper article or blog post was discerned. It was found that action was not only the most frequently appearing frame but also the most dominant frame in newspapers (30.5%), followed by the attribution of responsibility frame (20.5%), severity frame (13.8%), reassurance frame (13.8%), conflict frame (13.8%), economic influence frame (4.3%), and uncertainty frame (3.8%) (Table 3-5). For blogs, the most dominant frame was the conflict frame (26.8%), followed by attribution of responsibility frame (23.3%), and severity frame (20.5%). Action frame (15.8%), reassurance frame (5.5%), economic influence frame (4.3%), and uncertainty frame (4.08%) were less likely to be the most dominant frame in blogs (Table 3-5).

Table 3-5. Dominant frame in the coverage of the tainted formula incidents

Dominant Frame	Newspaper		Blog		χ^2	<i>p</i>
	Frequency	Percent	Frequency	Percent		
Action frame	122	30.5%	63	15.8%	24.48	.000
Responsibility Frame	82	20.5%	93	23.3%	.89	.347
Severity Frame	55	13.8%	82	20.5%	6.42	.011
Conflict frame	53	13.3%	107	26.8%	22.78	.000
Reassurance frame	55	13.8%	22	5.5%	15.65	.000
Economic frame	17	4.3%	17	4.3%	.00	.999
Uncertainty frame	15	3.8%	16	4.0%	.03	.855
Others	1	0.3%	0	0	--	--
Total	400	100.0%	400	100.0%	58.23	.000

To examine the framing differences between newspapers and blogs, a chi-square analysis was conducted. It was found that there were significant differences

for the action frame ($\chi^2=24.28$, $p<.001$, $df=1$), severity frame ($\chi^2=6.42$, $p<.05$, $df=1$), reassurance frame ($\chi^2=15.65$, $p<.001$, $df=1$), and conflict frame ($\chi^2=22.78$, $p<.001$, $df=1$). Table 3-5 shows that action frame and reassurance frame were more likely to appear as the most dominant frame in newspapers, while blogs were significantly more likely to include severity frame and conflict frame as the dominant frame.

Tone

The third set of research questions looked at the tones of the tainted formula coverage in newspapers, blogs and online forums. Frequency and chi-square analyses were conducted for newspaper articles and blog posts. Mean value analysis was used for forum analysis.

Table 3-6 shows that most newspapers articles did not appear to have a tone toward the government (78.0%) or toward dairy companies (71.8%) when covering the tainted formula scandals. Similarly, most blog posts did not appear to have a tone toward the government (56.3%) or toward dairy companies (48.5%). In total, 61.0% of newspaper stories and 36.1% of blog posts did not appear to have a tone toward both the government and dairy companies. Most of the remaining newspaper articles or blog posts were negative toward government or dairy companies (Table 3-6). There were a limited number of newspaper articles and blog posts with neutral/mixed tone to either government or dairy companies such as Sanlu, Shengyuan, etc. Virtually no stories or blogs posts were coded as including positive tones toward the government or dairy companies.

Similarly, in online forums, more than half of the posts (53.82%) in 200 threads did not appear to convey a tone toward either government or dairy companies. The remaining forum sample was mostly split, with 24.35% negative toward government and 20.13% negative in tone toward dairy companies. The mean number of posts in each thread that had no tone at all was the highest ($M=37.24$, $SD=89.27$), followed by the posts with negative tone toward the government ($M=16.85$, $SD=48.53$), and negative tones toward dairy companies ($M=13.93$, $SD=40.11$). The mean number of posts in each thread that had a positive tone toward the government ($M=.55$, $SD=3.73$) or a positive tone toward dairy companies ($M=.05$, $SD=.46$) were the lowest (Table 3-7).

Table 3-6. Tones in the newspaper and blog coverage of the tainted formula incidents

Tone	Newspaper (N=400)		Blog (N=400)		χ^2	p
	Frequency	Percent	Frequency	Percent		
Tone toward government					47.78	.000
Negative	70	17.5%	156	39.0%	45.61	.000
Positive	4	1.0%	2	0.5%	--	--
Neutral/mixed	14	3.5%	17	4.3%	.30	.583
No tone	312	78.0%	225	56.3%	42.87	.000
Tone toward dairy companies					47.58	.000
Negative	103	25.8%	195	48.8%	45.26	.000
Positive	1	0.3%	0	0	--	--
Neutral/mixed	9	2.3%	11	2.8%	.21	.651
No tone	287	71.8%	194	48.5%	45.09	.000
Tone toward both the government and dairy companies						
No tone	244	61.0%	144	36.0%	50.05	.000

Table 3-7. Tones in the coverage of the tainted formula incidents in online forums

Tone (N=200)	Sum*	Sum in proportion	M	SD
Negative toward government	3370	24.35%	16.85	48.53
Positive toward government	110	.79%	.55	3.73
Negative toward dairy companies	2786	20.13%	13.93	40.11
Positive toward dairy companies	10	.07%	.05	.46
Neutral/mixed	116	.84%	.58	2.90
No tone	7448	53.82%	37.24	89.47

*Sum is the total number of posts in 200 forum threads

For newspapers and blogs, tone was coded by identifying the presence of tone in each story, while for forum threads, tone was coded by the number of posts in each thread that presented different tones, so there is no way to compare forums to the other two media types. Table 3-6 shows the tone differences between newspapers and blogs. It was found that newspapers were significantly more likely to present no tone toward the government (78%) and dairy companies (71.8%) than blogs. Compared to newspapers, blogs were significantly more likely to show negative tones toward the government (39.0%) and dairy companies (48.8%). However, due to the small number of positive tone stories and neutral tone stories, no statistical analyses could be conducted on these variables without violating analytical assumptions.

Source

The fourth set of research questions examined the sources used in the tainted formula coverage in newspapers, blogs and online forums. Mean value was calculated to find out what sources were used frequently. One-way ANOVA analysis was conducted for comparison of sourcing differences among media.

Table 3-8. One-way ANOVA examining sources used in the coverage of the tainted formula incidents

Source	Newspaper (N=400)			Blog (N=400)			Forum (N=200)			F (df=2)	p
	Sum	M	SD	Sum	M	SD	Sum	M	SD		
Government	324	.81 ^{ab}	1.00	110	.28 ^a	.74	72	.36 ^b	.78	42.30	.000
Health agency	239	.60 ^a	.78	121	.30 ^{ab}	.67	99	.50 ^b	1.06	13.71	.000
NGO	32	.08	.29	27	.07	.32	12	.06	.31	.33	.722
Expert	57	.14	.48	71	.18	.67	37	.18	.69	.47	.625
Hospital	15	.04	.30	26	.06	.40	16	.08	.32	1.16	.313
Dairy company	89	.22	.66	65	.16	.51	38	.19	.61	1.03	.359
Victim	49	.12	.54	51	.13	.51	27	.13	.51	.04	.962
Citizen	59	.15 ^a	.53	108	.27	.86	104	.52 ^a	2.71	4.95	.007
Traditional media	72	.18 ^a	.45	213	.53 ^b	.91	171	.85 ^{ab}	1.27	43.71	.000
Online media	22	.06 ^{ab}	.57	100	.25 ^a	.87	50	.25 ^b	.69	8.66	.000
Others	53	.13	.53	31	.08	.33	13	.07	.46	2.20	.111

^{ab} Sources with the same superscript are significantly different at the $p < .05$ level.

Table 3-8 shows that, for newspapers, government sources ($M=.81$, $SD=1.00$) and health agency sources ($M=.60$, $SD=.78$) were most frequently cited. For blogs, traditional media ($M=.53$, $SD=.91$), health agency ($M=.30$, $SD=.67$), government ($M=.28$, $SD=.74$), citizens ($M=.27$, $SD=.86$), and online media ($M=.25$, $SD=.87$) were heavily cited as sources. For forums, traditional media ($M=.85$, $SD=1.27$), citizens ($M=.52$, $SD=2.71$), health agencies ($M=.50$, $SD=1.06$), government ($M=.36$, $SD=.78$), and online media ($M=.25$, $SD=.69$) were often cited as sources (Table 3-8).

One-way ANOVA analysis revealed that there were significant differences across newspapers, blogs, and forums in their use of government sources ($F=42.30$, $p<.001$, $df=2$), health agency sources ($F=13.71$, $p<.001$, $df=2$), citizen sources ($F=4.95$, $p<.01$, $df=2$), traditional media ($F=43.710$, $p<.001$, $df=2$), and online media ($F=8.66$, $p<.001$, $df=2$). Post-hoc tests using Scheffe's showed that newspapers ($M=.81$, $SD=1.00$) were significantly more likely to use government sources than blogs ($M=.28$, $SD=.74$) and online forums ($M=.36$, $SD=.78$). Blogs ($M=.30$, $SD=.67$) were significantly less likely to use health agency sources than newspapers ($M=.60$, $SD=.78$) and online forums ($M=.50$, $SD=1.06$). Online forums ($M=.52$, $SD=2.17$) were significantly more likely to use citizens as sources than were newspapers ($M=.15$, $SD=.53$). Newspapers ($M=.06$, $SD=.57$) were less likely to use online media as sources than blogs ($M=.25$, $SD=.87$) and forums ($M=.25$, $SD=.69$). In contrast, online forums ($M=.85$, $SD=1.27$) and blogs ($M=.53$, $SD=.91$) both cited traditional media more frequently as a source (Table 3-8).

Further, one-way ANOVA analysis revealed that there were significant sourcing differences among four different forums in terms of their use of traditional media ($F=3.70$, $p<.05$, $df=4$). Tianya was the forum that used the highest number of traditional media sources ($M=1.02$, $SD=1.87$) and the highest number of hyperlinks to multimedia content ($M=.51$, $SD=.76$) among the four.

Pattern of Participation

The fifth set of research questions probed into the pattern of participation in new media, namely, blogs and online discussion forums.

In the blog sample, seven posts were found forbidding reader comments. After excluding these posts from analysis, Table 3-15 shows that the average number of times a blog post about tainted formula scandals was read was 3,413.04, while the average number of reader comments to each post was 26.54. In forums, the average time that a thread about tainted formula incidents was hit was 9,875.86, while the average number of replies was 67.74.

To answer RQ5a about what stories generated more discussion, an independent sample T-test was conducted to find out the influence of story focus and frame on people's participation in online discussions. In other words, whether stories with a specific story focus or frame would generate a higher number of times that readers read the article/post, a higher number of reader comments, or a higher number of supportive/opposite/neutral/mixed/ new information/off-topic comments were explored through T-test analyses.

For story focus, the results showed that the appearance of incident influence in the blog post elicited significantly more neutral/mixed comments from readers ($M=.72$, $SD=3.26$); when action appeared as the story focus in blogs,

there were significantly fewer opposing comments ($M=.38$, $SD=1.83$) but more neutral comments ($M=1.08$, $SD=4.05$) and more blogger responses ($M=.39$, $SD=1.44$) (Table 3-9). In addition, when investigation of the tainted formula scandals was the major theme of the blog posts, there were significantly more reader comments ($M=46.40$, $SD=177.20$), more supportive comments ($M=31.90$, $SD=125.90$), and more comments from readers providing new information ($M=10.59$, $SD=48.38$) (Table 3-10). For frame, Table 3-11 shows that blog posts with an action frame would be less likely to have opposing comments ($M=.40$, $SD=1.82$), neutral/mixed comments ($M=.28$, $SD=1.33$), or blogger responses ($M=.41$, $SD=1.66$). Interestingly, blogs with a reassurance frame included more blogger responses ($M=1.67$, $SD=5.00$) (Table 3-11). For dominant frame, no significant influence was found except that blogs with reassurance as the dominant frame had more blogger responses ($M=2.29$, $SD=6.33$) (Table 3-12).

For the forum sample, the independent sample T-test revealed that forum posts describing solutions or influence of the tainted formula scandals had more neutral comments from readers (Table 3-13). When investigation of the tainted formula incidents was discussed in the forums, users left significantly more replies ($M=96.58$, $SD=197.83$), especially more supportive replies that showed agreement or at least similar viewpoints to the original post ($M=33.57$, $SD=51.29$) (Table 3-14).

Table 3-9. Independent sample T-test of story focus and reader participation in blogs

	Description				Solution				Influence			
	Appeared (N=225)		Not (N=168)		Appeared (N=131)		Not (N=262)		Appeared (N=185)		Not (N=208)	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Read times	2949.07	9858.36	4034.43	18983.09	4198.13	17994.92	3020.50	12355.78	3735.83	16976.06	3125.94	11836.28
Reader comment	23.99	56.46	29.96	146.98	24.37	72.16	27.63	118.22	25.44	73.77	27.52	126.71
Supportive	15.89	35.82	21.61	109.64	16.66	57.79	19.18	84.49	16.79	53.26	19.71	92.61
Opposite	.94	6.12	.39	1.74	.63	2.30	.75	5.62	1.01	6.54	.44	2.22
Neutral/mixed	.51	2.89	.35	1.41	.52	1.75	.40	2.63	.72 ^a	3.26	.19 ^a	1.03
Off-topic	1.58	3.13	1.98	4.58	2.31	5.20	1.47	2.86	1.82	3.81	1.69	3.83
New info	4.74	15.80	5.63	36.79	5.82	32.03	3.72	10.30	4.68	16.03	5.51	33.67
Blogger response	.63	2.25	.57	2.70	.68	2.80	.57	2.26	.58	2.34	.63	2.55

^a $t = -2.21, df=391, p < .05$

Table 3-9. Continued

	Investigation				Action			
	Appeared (N=166)		Not (N=227)		Appeared (N=275)		Not (N=118)	
	M	SD	M	SD	M	SD	M	SD
Read times	3465.39	13492.60	3374.76	15172.15	3077.63	15134.93	4194.72	12808.86
Reader comment	35.14	146.10	20.25	58.83	25.84	117.75	28.18	67.04
Supportive	24.18	103.80	14.07	47.53	18.94	88.08	16.93	38.31
Opposite	.90	6.88	.57	2.22	.38 ^b	1.83	1.47 ^b	8.22
Neutral/mixed	.63	3.33	.30	1.27	1.08 ^c	4.05	.16 ^c	.89
Off-topic	1.55	2.68	1.89	4.47	1.51	3.39	2.32	4.63
New info	7.84	39.84	3.13	8.91	4.87	29.32	5.71	19.91
Blogger response	.84	2.60	.43	2.32	.39 ^d	1.44	1.11 ^d	3.86

^b $t = 2.07, df=391, p < .05$; ^c $t = 3.58, df=391, p < .001$; ^d $t = 2.70, df=391, p < .01$

Table 3-10. Independent sample T-test of major focus and reader participation in blogs

	Description				Solution				Influence			
	Major focus (N=55)		Not (N=338)		Major focus (N=63)		Not (N=330)		Major focus (N=82)		Not (N=311)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Read times	1176.22	3229.10	3777.02	15520.63	5674.79	24071.90	2981.25	11792.65	2296.72	9287.56	3707.38	15548.77
Reader comment	11.80	29.21	28.94	112.50	27.13	92.31	26.43	107.43	16.54	26.93	29.18	117.17
Supportive	7.85	21.98	20.04	81.98	18.38	76.12	18.33	76.76	10.37	18.07	20.44	85.48
Opposite	.44	2.35	.75	5.06	.51	1.98	.75	5.14	.76	2.04	.69	5.26
Neutral/mixed	.11	.57	.49	2.54	.43	1.15	.44	2.54	.49	2.05	.43	2.45
Off-topic	.87	1.96	1.89	4.02	2.98 ^a	6.32	1.52 ^a	3.08	1.55	3.40	1.80	3.92
New info	2.60	7.17	5.53	28.76	3.81	10.64	5.37	28.90	3.24	8.53	5.61	29.82
Blogger response	.36	.87	.64	2.62	.89	3.79	.55	2.10	.40	1.88	.66	2.58

^a $t = -2.82, df=391, p < .01$

Table 3-10. Continued

	Investigation				Action			
	Major focus (N=111)		Not (N=282)		Major focus (N=82)		Not (N=311)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Read times	4557.71	16338.17	2962.48	13668.33	2742.49	10148.14	3589.84	15416.23
Reader comment	46.40 ^b	177.20	18.73 ^b	53.71	19.11	45.79	28.50	115.70
Supportive	31.90 ^c	125.90	13.00 ^c	43.26	14.95	36.89	19.23	83.99
Opposite	1.23	8.39	.50	2.02	.28	1.78	.82	5.28
Neutral/mixed	.79	3.90	.30	1.35	.15	.92	.52	2.62
Off-topic	1.81	2.93	1.73	4.12	1.51	3.51	1.81	3.90
New info	10.59 ^d	48.38	2.97 ^d	8.42	2.29	7.14	5.86	29.89
Blogger response	.88	2.74	.50	2.33	.38	1.88	.67	2.58

^b $t = -2.37, df=391, p < .05$; ^c $t = -2.21, df=391, p < .05$; ^d $t = -2.55, df=391, p < .05$

Table 3-11. Independent sample T-test of frame and reader participation in blogs

	Responsibility				Severity			
	Appeared (N=206)		Not (N=187)		Appeared (N=283)		Not (N=110)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Read times	3136.55	12283.64	3717.62	16574.67	16139.59	959.40	2767.86	8852.65
Reader comment	32.87	132.11	19.57	62.67	30.43	122.08	16.55	31.34
Supportive	22.57	93.92	13.68	50.90	21.37	89.27	10.55	19.42
Opposite	.82	6.19	.59	2.38	.74	5.43	.62	2.36
Neutral/mixed	.63	3.09	.24	1.12	.43	2.57	.45	1.76
Off-topic	1.58	2.71	1.94	4.75	1.67	3.56	1.96	4.42
New info	7.25	36.11	2.78	8.30	5.93	30.92	3.04	10.36
Blogger response	.59	2.07	.63	2.82	.53	2.06	.80	3.25

Table 3-11. Continued

	Action				Conflict			
	Appeared (N=282)		Not (N=111)		Appeared (N=98)		Not (N=295)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Read times	3591.73	15721.13	2959.07	10694.46	3555.67	15824.43	2983.70	9315.56
Reader comment	27.75	117.15	23.48	65.17	29.56	119.62	17.45	33.28
Supportive	20.10	87.49	13.86	36.16	21.17	87.39	9.82	21.06
Opposite	.40 ^a	1.82	1.49 ^a	8.47	.74	5.31	.62	2.58
Neutral/mixed	.28 ^b	1.33	.84 ^b	3.91	.50	2.65	.26	1.21
Off-topic	1.64	3.66	2.04	4.20	1.64	3.46	2.09	4.75
New info	5.33	29.19	4.59	19.65	5.48	30.43	4.04	9.95
Blogger response	.41 ^c	1.66	1.09 ^c	3.75	.55	2.03	.79	3.43

^a $t = 2.04$, $df=391$, $p < .05$; ^b $t = 2.09$, $df=391$, $p < .05$; ^c $t = 2.48$, $df=391$, $p < .05$

Table 3-11. Continued

	Economic influence				Reassurance				Uncertainty			
	Appeared (N=40)		Not (N=353)		Appeared (N=36)		Not (N=357)		Appeared (N=64)		Not (N=329)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Read times	4336.75	11813.49	3308.37	14750.02	2186.67	3719.78	3536.71	15132.29	2072.58	5259.80	3673.80	15635.20
Reader comment	31.03	52.51	26.03	109.45	11.03	13.90	28.11	110.02	18.92	35.65	28.02	113.71
Supportive	20.18	36.87	18.13	79.86	5.31	8.28	19.65	80.18	11.38	19.90	19.69	83.18
Opposite	.55	1.36	.73	5.01	.67	2.64	.71	4.94	.61	2.93	.73	5.06
Neutral/mixed	.53	2.25	.43	2.39	.53	1.86	.43	2.42	.45	1.84	.44	2.46
Off-topic	2.78	4.76	1.63	3.69	2.56	6.12	1.67	3.51	1.85	4.06	1.25	2.18
New info	7.00	14.37	4.91	27.89	1.86	4.54	5.45	28.09	5.17	13.58	5.11	28.71
Blogger response	.25	1.01	.65	2.56	1.67 ^d	5.00	.50 ^d	2.01	.50	1.25	.63	2.62

^d. $t = -2.75$, $df=391$, $p < .01$

Table 3-12. Independent sample T-test of dominant frame and reader participation in blogs

	Responsibility				Severity			
	Dominant (N=92)		Not (N=301)		Dominant (N=79)		Not (N=314)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Read time	1462.13	2257.96	4009.33	16446.06	1997.49	5250.13	3769.18	15958.69
Reader comment	20.25	35.36	28.47	118.42	18.67	38.011	28.52	115.92
Supportive	15.34	28.10	19.26	86.12	11.11	25.69	20.16	84.62
Opposite	.38	1.62	.81	5.38	.63	2.55	.73	5.19
Neutral/mixed	.67	3.84	.37	1.69	.18	.80	.51	2.62
Off-topic	1.35	2.31	1.87	4.17	1.65	3.08	1.78	3.99
New info	2.52	6.50	5.91	30.41	4.33	11.09	5.32	29.50
Blogger response	.66	2.72	.59	2.37	.41	1.24	.66	2.67

Table 3-12. Continued

	Action				Conflict			
	Dominant (N=63)		Not (N=330)		Dominant (N=98)		Not (N=295)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Read time	6053.25	20801.56	2909.00	12895.68	4148.10	20770.58	3145.05	11372.41
Reader comment	45.76	222.80	22.87	60.89	28.00	90.92	26.01	109.88
Supportive	32.83	163.01	15.57	43.92	20.08	66.59	17.70	79.99
Opposite	.41	2.08	.76	5.13	1.29	8.53	.50	2.14
Neutral/mixed	.37	1.51	.45	2.51	.53	2.27	.41	2.41
Off-topic	1.86	4.03	1.73	3.78	1.47	3.70	1.85	3.86
New info	10.33	58.95	4.12	14.00	4.51	18.91	5.34	29.20
Blogger response	.83	2.86	.56	2.37	.40	1.27	.68	2.76

Table 3-12. Continued

	Economic influence				Reassurance				Uncertainty			
	Dominant (N=40)		Not (N=353)		Dominant (N=21)		Not (N=372)		Dominant (N=16)		Not (N=377)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Read time	7395.59	17574.14	3232.98	14314.52	2670.57	4316.89	3454.95	14837.67	3143.44	8767.18	3424.48	14669.12
Reader comment	38.41	63.20	26.01	106.57	11.24	13.85	27.41	107.86	23.81	60.05	26.66	106.58
Supportive	25.29	41.59	18.02	77.79	5.43	9.36	19.07	78.61	12.38	29.55	18.59	77.94
Opposite	.65	1.69	.71	4.87	.19	.68	.74	4.90	1.06	3.99	.69	4.81
Neutral/mixed	.47	1.94	.44	2.39	.10	.30	.46	2.44	.50	2.00	.44	2.39
Off-topic	3.59	6.06	1.67	3.68	4.00	7.71	1.62	3.45	1.13	2.34	1.78	3.87
New info	8.41	14.84	4.97	27.24	1.52	4.40	5.32	27.54	8.63	24.41	4.97	26.94
Blogger response	.06	.24	.63	2.50	2.29 ^a	6.33	.51 ^a	2.00	.13	.50	.63	2.50

^a. $t = -3.269$, $df=391$, $p = .001$

Table 3-13. Independent sample T-test of story focus and reader participation in forums

	Description				Solution				Influence			
	Appeared (N=128)		Not (N=72)		Appeared (N=56)		Not (N=144)		Appeared (N=64)		Not (N=136)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Hits	10574.15	22390.90	8634.47	18616.78	11902.41	22321.97	9087.76	20607.61	11445.56	18147.32	9137.18	22356.24
Replies	72.77	146.85	58.79	124.97	77.73	134.57	63.85	141.25	70.64	122.74	66.38	146.74
Supportive	26.50	39.88	23.15	51.93	27.36	45.70	24.49	44.15	27.53	40.47	24.24	46.37
Opposite	2.87	8.32	5.65	13.62	3.95	10.65	3.84	10.60	3.08	7.98	4.24	11.62
Neutral/mixed	1.37	5.92	.63	1.81	2.27 ^a	8.55	.65 ^a	2.03	2.30 ^b	8.05	.54 ^b	1.92
Off-topic	38.65	107.65	27.10	68.25	41.00	85.49	31.96	99.07	33.75	77.96	34.84	102.77
New info	3.34	5.83	2.26	3.95	3.00	4.60	2.93	5.50	3.86	6.72	2.52	4.35

^a $t = -2.14$, $df=198$, $p < .05$; ^b $t = 2.07$, $df=198$, $p < .05$

Table 3-13. Continued

	Investigation				Action			
	Appeared (N=105)		Not (N=95)		Appeared (N=146)		Not (N=54)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Hits	11356.35	23585.29	8239.54	17899.38	9975.98	19320.80	9605.19	25446.83
Replies	82.13	168.22	51.83	96.09	75.83	150.25	45.87	101.69
Supportive	30.05	45.93	20.04	42.47	28.29	47.33	17.19	34.84
Opposite	4.05	11.51	3.67	9.53	4.34	11.26	2.61	8.48
Neutral/mixed	1.55	6.12	.60	2.87	1.22	5.50	.78	2.46
Off-topic	43.08	121.30	25.00	52.80	38.81	105.63	22.81	58.39
New info	3.35	4.88	2.51	5.62	3.14	5.60	2.44	4.17

Table 3-14. Independent sample T-test of major focus and reader participation in forums

	Description				Solution				Influence			
	Major focus (N=34)		Not (N=166)		Major focus (N=21)		Not (N=179)		Major focus (N=23)		Not (N=177)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Hits	9084.44	22678.04	10037.96	20810.15	7907.90	11781.64	10106.74	21927.56	8850.78	17081.58	10009.07	21585.74
Replies	46.85	60.52	72.02	150.11	48.43	49.04	70.01	146.11	45.17	65.66	70.67	145.94
Supportive	15.79	18.59	27.24	47.92	15.67	26.57	26.42	46.06	17.96	27.03	26.25	46.25
Opposite	2.41	7.09	4.17	11.16	2.86	6.48	3.99	10.98	.78	1.17	4.27	11.19
Neutral/mixed	.44	1.89	1.23	5.27	1.14	3.10	1.10	5.04	1.65	5.56	1.03	4.78
Off-topic	24.53	39.02	36.53	103.11	26.90	28.93	35.38	100.30	21.09	34.39	36.23	100.51
New info	3.68	5.68	2.80	5.16	1.86	2.57	3.08	5.47	3.43	5.35	2.89	5.25

Table 3-14. Continued

	Investigation				Action			
	Major focus (N=72)		Not (N=128)		Major focus (N=50)		Not (N=150)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Hits	11961.88	23535.63	8702.48	19569.04	8708.26	21404.00	10265.07	21032.59
Replies	96.58 ^a	197.83	51.52 ^a	88.04	58.90	120.89	70.69	145.06
Supportive	33.57 ^b	51.29	20.64 ^b	39.63	27.26	56.10	24.64	40.09
Opposite	4.97	13.39	3.25	8.63	5.12	11.59	3.45	10.24
Neutral/mixed	1.81	7.10	.70	2.92	.26	1.08	1.38	5.56
Off-topic	53.18	144.63	23.98	47.31	23.70	62.42	38.09	103.94
New info	3.01	4.63	2.91	5.58	2.60	6.51	3.07	4.78

^a $t = -2.22$, $df=198$, $p < .05$; ^b $t = -1.99$, $df=391$, $p < .05$

To answer RQ5b about the responsiveness of discussion in blogs and online forums, it was found that, among the 393 blog posts that allowed comments, only 59 had blogger responses. The average ratio of reader comments to blogger responses in blogs was 43.5. In forums, the average ratio of hits and replies was 145.79, with an average reply rate at .69% (Table 3-15).

To answer RQ5c about the homogeneity of discussion in online forums and blogs, Table 3-16 shows that the number of supportive reader comments ($M=18.34$, $SD=76.56$) in blogs was the highest among all the categories, followed by comments providing new information ($M=5.12$, $SD=26.82$). In forums, more replies were off-topic comments ($M=34.49$, $SD=95.34$) and supportive comments ($M=25.30$, $SD=44.49$), followed by opposing comments ($M=3.87$, $SD=10.59$) (Table 3-16).

Table 3-15. Responsiveness of discussion in blogs and online forums

	Min.	Max.	Sum	<i>M</i>	<i>SD</i>
Blog (N=393)					
Times being read	30	188,653	1,341,325	3,413.04	14,468.74
Blogger response	0	29	238	.61	2.45
Reader comments	0	1755	10,431	26.54	105.04
Forum (N=200)					
Number of hits	68	125,010	1,975,173	9,875.86	21,082.82
Number of replies	5	1,261	13,548	67.74	139.21

Table 3-16. Homogeneity of discussion in blogs and online forums

	Blog (N=393)				Forum (N=200)			
	Max.	Sum	<i>M</i>	<i>SD</i>	Max.	Sum	<i>M</i>	<i>SD</i>
Comments/replies	1,755	10,431	26.54	105.04	1261	13,548	67.74	139.21
Supportive	1,278	7,207	18.34	76.56	358	5,059	25.30	44.49
New information	468	2,012	5.12	26.82	44	590	2.95	5.25
Opposite	86	278	.71	4.77	68	774	3.87	10.59
Neutral/mixed	34	173	.44	2.37	57	220	1.10	4.87
Off-topic	33	688	1.75	3.82	1032	6,898	34.49	95.34
Others	6	12	.03	.34	3	8	.04	.33

Multimedia and Hyperlinks

The sixth set of research questions was about multimedia and hyperlinks in blogs and online forums when covering the tainted formula scandals. Table 3-17 shows that,

for embedded multimedia features, pictures were the most frequently used in either blogs ($M=.43$, $SD=1.22$) or forums ($M=.70$, $SD=1.90$), while audio and video were barely employed in coverage. For hyperlinks, on average the highest number of hyperlinks in blogs ($M=.73$, $SD=2.07$) and forums ($M=1.62$, $SD=5.42$) linked to texts rather than multimedia only or multimedia and text combined pages. In blogs, there were more external hyperlinks to online media ($M=.47$, $SD=1.92$) and internal hyperlinks to other posts on the blog portal ($M=.36$, $SD=1.71$). In forums, the number of internal hyperlinks to other posts in the forum ($M=1.22$, $SD=5.02$) was the highest, followed by external hyperlinks to online media ($M=.40$, $SD=3.04$) and external hyperlinks to legacy news sites ($M=.20$, $SD=1.16$) (Table 3-17).

Table 3-17. Multimedia and hyperlinks in blogs and online forums

	Blog (N=400)				Forum (N=200)			
	Max.	Sum	<i>M</i>	<i>SD</i>	Max.	Sum	<i>M</i>	<i>SD</i>
Embedded multimedia								
Pictures	10	174	.43	1.22	16	139	.70	1.90
Audio	3	4	.01	.16	0	0	.00	.00
Videos	1	2	.01	.07	0	0	.00	.00
Type of hyperlinks								
Internal	16	142	.36	1.71	50	243	1.22	5.02
External to online media	30	187	.47	1.92	42	80	.40	3.04
External to legacy sites	6	61	.15	.56	11	41	.20	1.16
External to others	3	26	.06	.39	7	26	.13	.77
External to government sites	2	5	.01	.13	1	3	.02	.12
Hyperlinks to								
Texts	23	291	.73	2.07	42	323	1.62	5.42
Multimedia and texts	17	81	.20	1.07	8	42	.21	.90
Multimedia content	5	10	.02	.27	5	19	.10	.56

Given the low number of multimedia embedded or hyperlinked in blogs and forums, it is difficult to show how significant the influence multimedia features were on reader participation through statistical analyses. However, it was found that, on average, blog posts with multimedia included were read 6712.51 times and commented on 45.64 times, while blog posts with only text were read 2617.45 times and

commented on 43.02 times. In forums, those threads with multimedia features were read 18243.22 times and got 112.49 replies, on average, while those threads without multimedia included were read 7011.87 times and got 52.42 replies, on average.

Influence of Author

The last set of research questions explored the influence of authors, namely newspaper article writers and bloggers, on the coverage of formula scandals in newspapers and blogs. Generally speaking, male writers were dominant in both newspaper and blog reporting of tainted formula scandals—47.75% of newspaper stories were written by male journalists while only 20% were by female journalists; 61.25% of blog post were from men while only 38.75% were from women.

To answer RQ7a about the gender influence on content, chi-square analysis was conducted. Table 3-18 shows that, in newspapers, female reporters were significantly more likely to emphasize action (43.8%), while male reporters were more likely to use a conflict frame (18.8%). Table 3-19 shows that, in blogs, female bloggers were significantly more likely to emphasize solutions (25.8%) and use an action frame as the dominant frame, while male bloggers were more likely to focus on the impact of the tainted formula scandals (24.9%) and investigation of the scandals (32.7%).

To test the influence of gender on sources and patterns of participation, one-way ANOVA analysis was conducted. There was no significant finding of gender influence on sourcing in newspapers. But for blogs, male bloggers were more likely to use government sources ($F=2.31$, $p<.05$, $df=1$) and NGO sources ($F=4.40$, $p<.05$, $df=1$). In addition, female bloggers were more likely to attract reader comments ($F=6.30$, $p<.05$, $df=1$) and leave responses for readers ($F=4.48$, $p<.05$, $df=1$).

Table 3-18. Gender differences of authors in the newspaper coverage of tainted formula incidents

Gender (N=400)	Male (N=191)	Female (N=80)	Unknown (N=48)	News Agency (N=81)	χ^2	<i>p</i>
Major Focus					27.01	.008
Actions	54 (28.3%)	35 (43.8%)	10 (20.8%)	36 (44.4%)	13.87	.003
Investigation	44 (23.0%)	12 (15.0%)	14 (29.2%)	22 (27.2%)	4.71	.194
Solutions	40 (20.9%)	12 (15.0%)	8 (16.7%)	7 (8.6%)	6.40	.094
Influence	33 (17.3%)	8 (10.0%)	7 (14.6%)	5 (6.2%)	7.03	.071
Incident description	20 (10.5%)	13 (16.3%)	9 (18.8%)	11 (13.6%)	3.18	.365
Dominant Frame					36.73	.018
Action frame	51 (26.7%)	32 (40.0%)	13 (27.1%)	26 (32.1%)	5.07	.167
Responsibility frame	45 (23.6%)	10 (12.5%)	10 (20.8%)	17 (21.0%)	4.15	.235
Conflict frame	36 (18.8%)	6 (7.5%)	6 (12.5%)	5 (6.2%)	11.06	.011
Reassurance frame	20 (10.5%)	17 (21.3%)	7 (14.6%)	11 (13.6%)	5.56	.135
Severity frame	20 (10.5%)	11 (13.8%)	8 (16.7%)	16 (19.8%)	4.54	.209
Economic frame	10 (5.2%)	1 (1.3%)	4 (8.3%)	2 (2.5%)	--	--
Uncertainty frame	9 (4.7%)	2 (2.5%)	0	4 (4.9%)	--	--
Others	0	1 (1.3%)	0	0	--	--

Table 3-19. Gender differences in the blog coverage of tainted formula incidents

Gender (N=400)	Male (N=245)	Female (N=155)	χ^2	<i>p</i>
Major Focus			26.76	.000
Investigation	80 (32.7%)	33 (21.3%)	6.05	.014
Influence	61 (24.9%)	21 (13.5%)	7.50	.006
Actions	46 (18.8%)	36 (23.2%)	1.15	.283
Incident description	34 (13.9%)	25 (16.1%)	.38	.536
Solutions	24 (9.8%)	40 (25.8%)	18.11	.000
Dominant Frame			18.87	.004
Conflict frame	71 (29.0%)	36 (23.2%)	1.60	.205
Responsibility Frame	64 (26.1%)	29 (18.7%)	2.92	.087
Severity Frame	48 (19.6%)	34 (21.9%)	.32	.572
Action frame	28 (11.4%)	35 (22.6%)	8.90	.003
Economic frame	15 (6.1%)	2 (1.3%)	--	--
Reassurance frame	10 (4.1%)	12 (7.7%)	2.45	.118
Uncertainty frame	9 (3.7%)	7 (4.5%)	.18	.675

To answer RQ7b about the influence of blogger type on the content, chi-square analysis was used. The data showed that different types of bloggers—health expert bloggers, parent bloggers, journalist bloggers, and citizen bloggers—were significantly different in the major focus and dominant frames in tainted-formula-scandal-related blog posts. Table 3-20 shows that health expert bloggers were most likely to focus on

solutions (31.0%) and incident descriptions (23%); parent bloggers were most likely to focus on actions (33.0%) and to use an action frame as the dominant frame (28.0%); journalist bloggers were more likely to emphasize the impact of the scandals (33.0%) and the investigation (35.0%) of the incidents, while citizen bloggers were the most interested in the investigation of the incidents (39.0%) and using the attribution of responsibility frame (36.0%) as the dominant frame in their blogs.

Table 3-20. Influence of blogger type in the coverage of tainted formula incidents

Type of Blogger (N=400)	Health Expert (N=100)	Parent (N=100)	Journalist (N=100)	Citizen (N=100)	χ^2	<i>p</i>
Major Focus					80.58	.000
Solutions	31	19	7	7	29.46	.000
Incident description	23	21	6	9	17.24	.001
Investigation	21	18	35	39	15.73	.001
Influence	16	9	33	24	19.70	.000
Actions	9	33	19	21	17.86	.000
Dominant frame					86.69	.000
Severity Frame	26	21	17	18	3.01	.391
Conflict frame	20	26	33	28	4.43	.219
Action frame	17	28	8	10	18.45	.000
Reassurance frame	16	4	0	2	--	--
Responsibility frame	13	16	28	36	19.21	.000
Uncertainty frame	7	5	3	1	--	--
Economic frame	1	0	11	5	--	--

In addition, using one-way ANOVA analysis, a significant influence of blogger type was found on the number of reader comments ($F=3.87$, $p<.05$, $df=3$), in that citizen bloggers received 76.53 more comments than parent bloggers on average. Health expert bloggers were more likely to use pictures than journalist bloggers and citizen bloggers ($F=6.20$, $p<.001$, $df=3$).

CHAPTER 5 DISCUSSION AND CONCLUSIONS

Given the severity of Chinese food safety problems in recent years, people are paying more attention to food safety issues in China. One of the most prominent food safety issues has concerned the milk formulas for babies. Considering the low full breastfeeding rate and the fact that the mean duration of any breastfeeding in most areas in China was between seven and nine months (Xu, Qiu, Binnes, & Liu, 2009), milk formula has become the main food for babies. Moreover, since there is a one-child policy in China (Xu, Qiu, Binnes, & Liu, 2009), the social impact of the tainted formula incidents is magnified. For such a severe public health crisis in the society, rapid and reliable communication is critical. It is necessary to examine how and what information about the scandals was revealed to people through traditional media, how the scandals were perceived by the public, how and what public discourse on the issue was framed through public discussions, as each of these aspects contributes to the understanding of both public health and public communication in China.

This study sought to examine the discourse on formula scandals in China from 2008 to 2011, when the tainted formula incidents broke out intensively, to enable understanding of the messages disseminated by the government, traditional media, and the public. In doing so, this study looked at the story focus, frames, tone, and sources in the coverage of the tainted formula scandals across newspapers, blogs, and online forums, testing author/gender influence on the content.

By comparing the government discourse represented by traditional media and the public discourse expressed through Internet-based media such as blogs and public forums, significant differences were revealed. Through analysis of these differences,

this study provided a baseline for understanding the reasons and implications for differences and linkages between old and new media in China.

Specifically, this investigation extensively analyzed the characteristics of citizen journalism and the role of new media in China from an agenda-setting perspective (i.e., McCombs & Shaw, 1972), predicting its possible development in the future. Such inquiry not only helps provide insights into the particular genres of new media, but also adds an important theoretical dimension of the underlying mechanism regarding gatekeeping, agenda-setting, and agenda-building in new media as well as inter-media agenda-setting between old and new media. As an integral part of the research, this part of the investigation aimed to further understanding of the growing impact of new media in China and how that may change the media landscape, information flow, and power structure in Chinese society. The pattern of participation in new media, including the quantity and characteristics of comments/replies, communication among readers and bloggers as well as communication among forum discussants, especially the responsiveness and homogeneity in their discussions, was examined. Special attention was paid to those blog/forum posts with more replies, revealing possible factors contributing to active participation. Further, multimedia and hyperlinks employed in forums and blogs' coverage of tainted formula scandals were examined.

Coverage of the Tainted Formula Scandals

Story Focus and Frame

Analyzing the coverage of the tainted formula scandals, action and incident descriptions were presented in at least half or more stories in newspapers, blogs, and discussion forums, and were apparently the most prevalent story foci. It is probably because those issues were more pertinent to readers, as people were interested in the

development of the tainted formula incidents and the actions taken to deal with the incidents, such as taking care of sick children, recalling/destroying the tainted formula, or guaranteeing the quality of dairy products and protecting public health.

The researcher found that while several story foci and frames appeared in the articles and posts, often a single major story focus or frame was dominant. While many story foci or frames may be present and manifest in one's reporting, one particular story focus or frame category may dominate the writer's thinking at the time, showing the primary concern, which is why it is investigated here (Rogan, 2006). For at least half of all newspaper articles, blogs, and forum posts, actions and investigation were the major story focus. However, although action was the main theme for the highest number (33.8%) of newspaper articles, this study showed that investigation became the most prevalent major story focus in blogs and forums. This finding is important because it gives a better idea of the way the public perceived the issue and conveyed its concerns. Due to state ownership, Chinese newspapers were under the close direction of the government. As a result, actions, especially actions by the government, were emphasized in the overall newspaper coverage of the formula incidents, so as to stress the ability and determination of the government in protecting the public health. In contrast, grassroots new media such as blogs and forums were more like alternative platforms for citizens wanting to speak out. People angry about the tainted formula were keen on knowing the facts, possible causes, and persons responsible for the incidents.

Interestingly, incident description, the second most frequent story focus across media, was on the bottom of the list for the presence of major story focus in newspapers and blogs. It seems that the description of the incidents was more likely to be mentioned

in most stories of tainted formula scandals, but less likely to be the main theme of the articles/posts. Some other differences for story focus were also revealed among the three platforms. For example, blogs, rather than newspapers or forums, were the most likely to mention and emphasize the social impact of the incidents. Forums were the least likely to suggest solutions for the tainted formula incidents. But each devoted a majority of the space to the discussion of investigation and actions.

Based on framing theory (Entman, 1993) and second-level agenda-setting theory (McCombs, 2005), frames appearing in each story/post and the most dominant frame in each story were analyzed. Frames can help readers to better process the messages received and understand the issues being covered (Entman, 1993). The results of frequency analysis revealed that, consistent with the findings for action as a story focus, the action frame appeared most frequently in newspaper stories (87.5%) and was also the most frequently the dominant frame in newspaper coverage (30.5%). It seems that newspaper journalists, whether under the direction of the government or through self-constraints, constantly emphasized actions, especially actions by the government and health agencies. This may reflect the routines of news reporting in China in that when any accident or incident with negative social impact has happens, action by the government always takes precedence over all other issues in news coverage, so as to help establish the authority and positive image of the government.

However, for blogs, the conflict frame was the most frequently appearing frame (74.8%) and the most dominant frame (26.8%). To the general public, the tainted formula scandals first and foremost represented a conflict—milk formula that was

supposed to nourish babies ironically poisoned them, causing serious concerns about public health in the society.

The severity frame was the second most frequent frame and the third most dominant frame appearing in both newspapers and blogs, as authors continually mentioned the number of cases, the number of deaths and the spread of the tainted formula contamination. The attribution of responsibility frame, which identified those responsible for the tainted formula scandals, was the second most dominant frame in newspapers (20.5%) and blogs (23.3%), showing that both traditional media and new media were interested in why such a public health crisis happened and who should take the responsibility.

Although in some cases the coverage was similar among media, framing differences between newspapers and blogs often dwarfed the similarities. As mentioned before, newspapers were more likely to use an action frame. When using the action frame to show the efforts that the government, health agencies, and individuals had made to stop or correct the tainted formula scandals, newspapers were also more likely than blogs to use the reassurance frame, so as to show readers that the tainted formula incidents were under control and the public need not to worry or should be less worried about it. On the contrary, bloggers seemed to adopt an alternative approach by accentuating the severity frame and conflict frame, showing an obvious discrepancy between traditional media and new media in China.

From the agenda-setting perspective, it seems that the state-controlled media were trying to get people to think about how the government and its agencies are looking after their own welfare. However, the bloggers and forum discussants did not

follow the agenda set by the newspapers. Instead, they were trying to get people to think about why the tainted formula scandals happened and who or what may be responsible. Obviously, the government and traditional media were concerned about their own interests, while the independent citizen media were concerned about the welfare of the people.

Tone and Source

As tones differ in news reporting or online discussions, the attitude or the understanding of the issues by authors or discussants may be revealed. Overall, about 50% or more of the sample, including newspaper articles, blog and forum posts, were basic statements of facts without subjective judgment, conveying no tone toward either the government or dairy companies. However, significant differences were noted between traditional and new media in that more than 60% of the newspaper articles had no tone, while only about 36% of blog post and 54% of forum posts showed no tone toward the government and dairy companies. This makes sense, considering that stories in blogs and forums are more opinion-based, while objective reporting is valued in newspapers. Further, it was found that, among those articles/posts with tones, the majority were negative toward the government or dairy companies. Barely any item had positive tones. Given the damages and adverse social impact caused by the tainted formula scandals and the malfunction of the government/dairy companies in the scandals, it is easy to understand why criticism was common throughout the coverage. In addition, the percentage of tainted formula stories with negative tones in newspapers was significantly lower than that in blogs.

The reason might be that objectivity is a professional value of journalists. In the effort to appear objective, Chinese newspaper reporters likely worked hard to avoid

sounding negative or positive about the story. It is also possible that Chinese newspapers represent the interests of the government, hence being less likely to criticize the government and dairy companies. In contrast, citizen media like blogs and forums are platforms for regular citizens to express opinions straightforwardly, regardless of the intentions of the government. It indicates that, with blogs and forums, Chinese people not only are able to investigate and discuss social issues previously kept out of public discussion, but also to express competing opinions on issues with a negative social impact, perhaps criticizing the government that was more likely to be presented in a positive way by traditional media. It also reveals that citizens who are not professional journalists are not bound by industry norms in journalism—they can feel free to show their opinions. Nevertheless, whether they realized it or not, Chinese Internet users have begun to use crowdsourcing with collective intelligence or participating in news reporting in new media such as blogs and forums. Certainly future research could more fully delve into this idea.

Source is another important issue to look at because sources have the power to shape news reports and influence media agendas (Bryant & Oliver, 2008; McCombs, 2005). In the coverage of the tainted formula incidents, government and health agency sources were cited most frequently in newspapers. This makes sense because organizations such as the government are seen as having more political or economic power than individuals in either Eastern or Western society, and thus are more likely to influence the news. Health agencies are the most professional and authoritative in providing health information. Given the nature of the tainted formula incidents as a public health crisis, the voices of health agencies should not be ignored. Chinese

journalists in traditional media rely heavily on routines in reporting, citing more organizational sources, especially government sources, which are convenient for them to access. For blogs and forums, traditional media such as news agencies, newspapers or TV were the most frequently used sources, along with government and health agencies. This is probably because, for Chinese citizens who posted on blogs and forums, most of their information about the tainted formula scandals came from media, especially traditional media. So it is not surprising to find that traditional media ranked highest in sources for blogs and forums, showing the strong agenda-setting power of traditional news sources in the society.

Some significant differences were shown to exist among media in their use of sources. Compared to newspapers, new media were significantly less likely to cite government and health agencies, while being more likely to use traditional media and citizen sources. This finding is consistent with previous research showing that online citizen media featured fewer official and organizational sources; online citizen journalists were less likely to be influenced by professional routines where sources representing organizations were regularly visited (Carpenter, 2008). Sources are often selected based on their availability and suitability (Gans, 1979). It would have been difficult for Chinese people who were posting in blogs and forums to get information directly from organizations or elites affiliated with those organizations. They were more likely to refer to newspapers, TV, and online news sites, and spreading what they knew online. So there were more traditional/online media sources in blogs and forums. As observed in coding, some bloggers and forum discussants simply copy-and-pasted what journalists have already published, while many of them not only repeated what the professionals

have said but also posted his or her own opinion regarding the issues covered to support or question the original reporting. However, since this is not part of coding for this study, there is no statistical evidence. Future research could further explore this issue. Concerning the higher number of citizen sources in forums and blogs, it may show that new media such as blogs and forums adopted a more grassroots perspective in reporting. Without denying the huge agenda-setting power of mass media, new media allow regular citizens more opportunities to serve as sources and reporters in the agenda-setting process.

Influence of Gender and Blogger Type

Consistent with previous studies revealing that there were gender and occupational differences in the health blogosphere (Miller, Pole, & Bateman, 2011), this study found that characteristics and background of the authors influenced the coverage of the tainted formula scandals in Chinese newspapers and blogs. Concerning gender, the data showed that male authors were dominant in both newspaper and blog reporting of the tainted formula scandals, which reflects the dominant role of men in traditional journalism as well as the gendered structure of Internet/blogging in China. With a total population of 1.34 billion in 2010, 51.27% of Chinese citizens were men, while 48.73% were women (National Bureau of Statistics of China, 2011). In the media industry, there are more male journalists. For example, about 84% of investigative journalists in China are men (Bandurski & Hala, 2010). For the online world, there were nearly 10% more male Internet users than female Internet users in China (CNNIC, 2010). Following the uneven male and female journalists/netizens' ratio in China, the researcher found there were at least 20% more newspaper or blog stories written by men than women in this study.

Moreover, the analysis shows that coverage of the tainted formula incidents in articles/blogs written by men differed greatly from those written by women, which is consistent with previous gender research in social psychology and communication showing that men and women have different ways of thinking, different language styles and interests (Tannen, 1986; Rodgers & Thorson, 2003). In this study, male authors were found to be more likely to use a conflict frame, and to focus on the investigation and social impact of the incidents. Although there is no systematic evidence showing that males were generally more interested in conflict, some previous studies revealed that men tend to be more assertive and aggressive, highlighting investigations in a conflict style, while women were more likely to employ cooperative orientations in conflicts (Cupach & Canary, 1997; Rogan, 2006). Also, male bloggers were found to use more government and NGO sources, showing a preference for authoritative organizations over individuals. In contrast, female authors were more likely to emphasize action and solutions when covering the tainted formula scandals. Additionally, female bloggers were comparatively more active in communication with readers by attracting more reader comments and responding more to those comments. This makes sense given that women tend to be more relationally focused in their communication with readers, employing cooperative orientations (Rogan, 2006; Tannen, 1986).

Gender socialization may offer a theoretical explanation for all these differences. The traditional gender model contends that men and women socialize differently in everyday life because they have different values, priorities, and social roles (Rodgers & Thorson, 2003). Men are presumed to value independent, assertive, and goal-directed

behaviors, while women are presumed to value interdependence and relationship with others (Rodgers & Thorson, 2003), which may explain the gender differences in this study that male authors were more likely to focus on the investigation and social impact of the incidents, while female bloggers were more active in two-way communication with readers.

Similar to gender, blogger type can also contribute to differences in the coverage of the tainted formula scandals. For example, health expert bloggers were most likely to focus on solutions (31.0%) and incident descriptions (23%), probably because their professional background makes it possible for them to provide medical information on diagnosis (i.e., symptoms of affected children) and solutions (i.e., possible treatment for affected children) (Miller, Pole, & Bateman, 2011). Parent bloggers were most likely to focus on actions (33.0%) and to use the action frame as the dominant frame (28.0%), because most parents talked about their own experiences and worries (i.e., what they did to diagnose, treat, or prevent kidney stones resulting from tainted formula for their children, etc.) and paid more attention to governmental actions in dealing with the incidents. Blogs by professional journalists were more likely to focus on the investigation (35.0%) and the social impact (33.0%). It seems that Chinese journalists perceive blogging as an extension of investigative journalism, continuing their gate-keeping function and setting the agenda for public debate (Yu, 2011). Citizen bloggers were revealed to be more interested in investigation and identifying who should take responsibility in their coverage, and they received more comments from readers. For citizen bloggers, when they were writing about the tainted formula incidents, it seems that most of them were very concerned about the issue, not only reporting on what they

knew but also writing their own thoughts on blogs to contribute to the social deliberation, and thereby attracting comments from those who were also very interested in the same issue for discussion. Compared to journalist bloggers who did not attract a lot of comments by continuing their same professional detachment in their blogs exactly as they do in the newspapers, citizen bloggers, by showing their human side and expressing points of view, stimulated the readers to join in and share their own thoughts. The difference between journalist bloggers and citizen bloggers in engaging audience reveals their different understandings of the participatory nature of new media as well as the significance of audience engagement.

No significant sourcing difference was revealed among different types of blogs. The researcher noticed that there was one thing in common for the four types of bloggers—traditional media were the most frequently cited sources. Apparently, no matter how professional or attentive the blogger was, they were more likely to be agenda followers compared to established media and organizations in the society. Also, when covering the tainted formula scandals, it seems that bloggers also frequently cited or hyperlinked to the same types of blogs. For example, health expert blogs often provided links to other health experts' blogs; more journalist blogs included content or hyperlinks from other journalists. This may indicate the agenda-setting power of bloggers in their own specialized blogosphere, showing an insular cycle of agenda-setting process. It seems same type bloggers were feeding each other and building upon each other.

Another finding concerning the effect of blogger type on the content is that health expert bloggers used more pictures than other bloggers. This is probably because some

health expert bloggers, especially two pediatricians who engaged intensively in the treatment of tainted formula victims, posted many photos of kidney stones.

The Growth of New Media

The past decade has witnessed the growth of new media around the world. China is one of the countries that has experienced high-speed development of the Internet and online media in the past ten years. While traditional media are limited by their routinized and institutional forms of news production in China, Internet-based media such as blogs, forums, and other social media provide alternative platforms for citizens to participate in information production and dissemination, changing the roles of regular people from passive recipients into active creators in communication, hence liberalizing journalism and mass communication in Chinese society (Moyo, 2009). The key in this revolution is the participation of people and their efforts in using new media technologies for spreading news and expressing opinions.

Participation

The pattern of participation in new media concerning the tainted formula scandals is one of the key issues this study explored. Internet users participate in online activities including information seeking, news publication, interactive discussions, etc. Their techniques, references, and beliefs based on past experiences and socialization contribute to their understanding of media (Bourdieu, 1993), influencing their online practices and discourse created through such practice. Generally speaking, when examining patterns of participation, this study focused on three dimensions: size/frequency of participation, level of interactivity/responsiveness, and homogeneity/heterogeneity in discussion.

This study showed, on average, each blog post was read 3,413 times and each forum thread was read 9,875 times, indicating a significant level of attention from Chinese netizens to the tainted formula incidents. Further, it was shown that, on average, each blog post received 26.54 reader comments and each forum thread included 67.74 replies. Chinese Internet users in this case did participate in the new media sphere. However, comparing the number of times that a blog post or a forum thread was read with the number of comments or replies from readers may suggest that more Chinese online users were lurkers who were more likely to engage in periphery participation: on average, every 129 reads of a blog post generated one comment and every 146 reads of a thread generated one reply. This may be because the participatory atmosphere in Chinese new media was still frail, or more online users, although interested in the topic, felt it would be difficult or were reluctant to say anything. In addition, it was revealed that the average ratio of blogger responses to reader comments was 1:43.5. These findings are consistent with previous research showing that there is a 90-9-1 rule in most online communities—90% of users are lurkers who never contribute, 9% of users contribute a little, and 1% of users account for almost all the participation (Nielsen, 2006). It seems that, although reader contribution, feedback, or crowdsourcing can contribute to newsgathering and information sharing, it was not yet a feature of online journalism in China (Yu, 2011).

Regarding the homogeneity/heterogeneity in discussion, it was found that the majority of reader comments in blogs were supportive of or supplemented the original posts, while only a limited number of comments offered opposing or neutral/mixed views. In other words, discussion in blogs was quite homogeneous. This could be a

result of the fact that people selectively choose to read blogs in accordance with their own points of view, hence making them more likely to agree with what the bloggers say.

It is also possible that the topic of this study, tainted formula scandal, may have had a specific impact on the results. The tainted formula scandal is a health issue, in which many innocent babies were hurt, so it is possible that people were more likely to demonstrate outrage about the egregiousness of this issue. The topic may have influenced the level of agreement with each other upon causes, solutions, actions, etc. When another issue such as economic or political relationship between countries is discussed, there would be a higher level of disagreement because it is a conflict-loaded topic.

In forums, the mean number of replies in each thread was higher than that in blogs. This makes sense considering that forums are designed for public discussions while blogs are well suited for self-expression. In forums as in blogs, except for comments that were off the topic, most replies were supportive of the original post. However, the proportion of supportive replies in forums was lower than that in blogs, and the proportion of opposing or neutral/mixed replies was higher, showing more diversity in conversations and a higher level of deliberation in public discourses. Through the back and forth of disagreement and discussion, a range of opinions can be debated and public consensus can be reached.

To further explore the factors that may influence the vitality and diversity of online discussion, it was revealed that when talking about the impact of the tainted formula incidents in blogs and forums, there were more neutral/mixed replies from readers, showing the uncertainty about the tainted formula's social impact among the public.

When the blog post covered actions or used an action frame, fewer opposing comments appeared, indicating there was a public consensus for taking actions to deal with the tainted formula incidents. In addition, it seems that the public was highly interested in the investigation of the tainted formula incidents; when investigation was the dominant frame in the blog posts and forum threads, there were significantly more replies, especially more supportive replies. Not yet satisfied by the information that had been released, the public wanted to know not only how the problem was being fixed but also the causes of the problem. Relating this finding to the nature of blogs and forums as citizen media, at a time when traditional media emphasized actions taken by the government to resolve the tainted formula problem, trying to establish a positive image of the government and somewhat concealing its responsibility for the scandals, citizens showed enthusiasm for continuing investigation on the issue through crowdsourcing, reflecting the autonomy of public discourses. Through writing and commenting on the unknown or unresolved issues in the tainted formula scandals, the public was demanding accountability. As the public discussions online would not allow the scandals to die down and disappear, the issue of responsibility, which could possibly fade away and never be resolved in mainstream media, was kept alive by the public.

One good case in point for crowdsourcing by the Chinese netizens is that they studied the website of AQSIQ, China's major food quality control bureau, after the breakout of the Sanlu tainted formula in 2008, finding out that the AQSIQ had ignored several complaints from parents about the formula before the breakout of the scandal (Change, 2008). The revelation of this finding online increased the severity of criticism

of the government in the public, leading to the resignation of the head of AQSIQ later (Chang, 2008; Ma, 2008).

There is an Internet saying recently in China, “public attention and scrutiny is power, surrounding and watching can change China” (*guanzhu jiushi liliang, weiguan gaibian zhongguo*, in Chinese: 关注就是力量, 围观改变中国), meaning that when citizens are not able to alter the performance or actions of the government authorities through other means, paying attention and expressing opinions online for the issues of concern may also contribute to the solving of social problems. In fact, citizens themselves become watchdogs, taking on the role that the press has in a democracy. The impact of a multiplicity of citizens watching and responding is greater than the sum of the individuals (Shirky, 2009). As the online public discourse gets stronger, the government and government authorities are less able to ignore public opinion. Instead, they have to respond to the public scrutiny, as happened in the tainted milk formula scandals (Chang, 2008; Yang, 2003). In this way, the power of the government is better watched and supervised, which is a good start toward more interactivity and balance between the government discourse and public discourse (Chang, 2008). When more inquiries from citizens are invoked and more social problems are revealed online, the transparency of the society can be improved and citizens could be empowered in the long run (Zheng & Wu, 2005).

Generally speaking, online citizen media have revived and magnified the public sphere in China. According to Habermas (1989), public sphere is a realm of social life in which people come together to discuss public issues and form public opinion. The findings of this study show that now there is a functional public sphere online in China,

in which people exchange ideas and form public opinion. Although the state-controlled media were trying to get people to think about how the government and its agencies are looking after their welfare, the bloggers and forum discussants set up their own agenda to get people focusing on the causes and the investigation of the public health crisis through civic participation.

Multimedia and Hyperlinks

Multimedia and hyperlinks are important features in new media. The application of hyperlinks and multimedia in new media is not only an issue of technology and skills but also an issue of understanding and developing a new culture of information sharing (Deuze, 2003). This study revealed that pictures were the most frequently embedded multimedia feature in both blogs and forums, while audio and video were barely employed in the coverage of the tainted formula scandals online. Similarly, when examining the content that was hyperlinked, it was revealed that a majority of hyperlinks linked to text content; only a very small number of hyperlinks connected to multimedia content or multimedia-and-text-combined content. Whether and how Internet users employ multimedia features indicates their attitudes and ability in using new media technologies. The limited use of multimedia in Chinese blogs and forums could result from users' inadequate knowledge of technology or their narrow understanding of its function to attract audiences and spread information. Or it might be topic-centric, as there might not be much opportunity for relevant audio or video materials available online for tainted formula scandals. In other words, this news did not lend itself to audio or video reports. Overall, it seems that multimedia is still an untapped source. However, when multimedia were present in a blog/forum post here, it was more likely for the post to attract more readers and get more replies. So perhaps Chinese Internet users should

adopt more multimedia features in online discussions in the future, so as to draw attention from the audience.

Hyperlinks are an easy and convenient way for Internet users to connect a story to other archives and resources (Deuze, 2003). In fact, compared to multimedia features, hyperlinks were more prevalent in Chinese new media when covering the tainted formula incidents. More specifically, most hyperlinks in blogs linked to independent online news sites, citizen media, or other posts in the same blog portal rather than government/health agency sites or legacy news sites maintained by newspapers, TV stations or news agencies. Similarly, the majority of hyperlinks in online forums connected to other posts in the same forum, independent news sites or personal blogs. It seems bloggers or forum discussants had heavy reliance on online media such as independent online news sites, personal blogs, etc. It is possible that, given their practice of blogging/forum posting and their liberalized ways of information seeking, Chinese online users have developed confidence in online media rather than traditional media (i.e., newspaper/TV websites) and other organizational sites (i.e., government or health agency sites). Or maybe Chinese Internet users were not satisfied with the information released from the government and traditional media sites for the tainted formula scandals, hence referring to sites outside government control that served better to the welfare of the public.

Implications

Theoretical Implications

This study makes a variety of important contributions to the development of agenda-setting theory, new media research, and Chinese media research.

The results of this content analysis added to the understanding of agenda-setting theory, expanding the knowledge of the theory, especially within the new media sphere and government-controlled media systems. Through the examination of the tainted formula scandal coverage in mainstream newspapers, online forums, and blogs from an agenda-setting perspective, this study revealed how traditional media and new media were involved in the agenda-setting process, showing the influence of the media agenda on the public agenda.

A vital criterion in assessing the usefulness of a social science theory is its theoretical scope of generality (Shoemaker, Tankard, & Lasorsa, 2004). With the development of the Internet and online media, there have been a lot of controversies about whether and how agenda-setting theory fits in the new media environment. By analyzing first- and second-level agenda setting in the coverage of the tainted formula incidents in new media and comparing it with what appeared in traditional mainstream media, the value of the agenda-setting theory in explaining the influence of new media (i.e., establishing issue salience, mirroring public discourses, etc.) was confirmed.

This study not only extends agenda-setting theory to new media platforms, but also tests the theory in a different media system set. China's traditional media is government-controlled, while China's online media is a somewhat semi-government-controlled media system. This study analyzed agendas about the same public health issue presented in both traditional media and online media in China, providing an opportunity for the researcher to understand the agenda differences between the two systems. Further, media, however powerful they may seem to be, are entities in a social setting under the influence of political systems, cultures, etc. By examining the agenda-

setting in the tainted formula incident coverage in Chinese media, this study extended the agenda-setting theory to a culturally, politically, and economically different social setting. China's unique political system, dual-ownership of traditional media, and censorship in both old and new media posits challenges to the traditional Western agenda setting research. Through a case analysis of news coverage in both traditional media and new media in China, this study may help to expand the research on agenda-setting theory in a culturally and politically different domain.

This study also provides an exploratory inquiry into an emerging area of scholarship where few researchers have ventured—Chinese new media research. Academic scholarship about new media in China is still in its infancy with a limited body of knowledge. This research allows scholars to understand Chinese new media in comparison with traditional media in China. The issue-specific quantitative study provides empirical data to support the claim that there is growing influence of new media in China, revealing the interplay among the Internet, media and social structures in Chinese society today, shedding light on journalism and media research. Hopefully, this work would begin a line of research in understanding the emerging new media phenomena in China and its influence on the traditional media as well as the emergence of a genuine public sphere.

Practical Implications

There has been monumental development in the digital landscape in the past decade, alongside huge political, economic, cultural, and technological changes in China. Traditional media (newspapers and TV) were the only or major information sources and agenda-setters previously. The emergence of new media (Internet) not only creates new venues of information for people but also provides bottom-up

approaches for agenda setting and public opinion formation in the society. It is possible that there is a transformation of public sphere in China today as what was in Europe in the 18th century. According to Habermas (1989), prior to the 18th century, European culture had been dominated by a representational culture, in which one party sought to represent itself in the society by overwhelming its agendas. However, the growth of newspapers, coffeehouses, reading clubs, etc., gave rise to the public sphere that was outside the state control and allowed individuals to exchange ideas, hence contributing to the development of the culture of public sphere in the 18th century in Europe.

Similarly in today's China, the development of the Internet and citizen online media makes it possible for the public to speak out and openly discuss public issues, therefore changing the previous situation in the society that only the government has the right to say. Consequently, a transformation of public sphere is under way in China now.

By examining the story focus, frames, tone, sources, participation patterns, and use of multimedia and hyperlinks in formula scandal coverage among mainstream newspapers, online forums, and blogs, this study offers an overview of communication strategies and tactics used by media practitioners and Internet users. It seems that traditional media are used to their established ways of news reporting on storytelling, framing, and sourcing. Probably due to government ownership, they were more likely to report positively on the government. In contrast, new media adopted a quite different approach to the coverage, reflecting a public discourse that was more negative to the government and dairy companies in the tainted formula incidents, and providing a strong alternative to the government discourse presented in traditional mainstream media.

Considering the power of setting agendas, it seems impossible to change the situation that mainstream media dominate in information production and dissemination in the short run. However, online media, including blogs and forums, have been catching up on becoming alternative information sources and establishing themselves as important news outlets for the public. In the case of the tainted formula coverage, the public has set a different agenda from what the traditional media were setting—the traditional media wanted to reassure everyone and to show the actions of the government to correct the scandal, while the public had an additional agenda of finding out why the problem occurred and who was to blame. This is of great significance to the journalism and media landscape in China, warning traditional media and communication professionals that they face the risk of being challenged. In a media world in which audiences can decide what news they want to get and how they want to get it, the future belongs to “those who understand the public’s changing behavior and can target content to audience” (Project for Excellence in Journalism, 2011).

Although new forms of journalism, such as journalist blogs, have been developed by traditional media in China to catch the trend toward online journalism, more forms of crowdsourcing and participatory journalism are worth exploration in the future, because it is likely that an increasing online public would use crowdsourcing and other forms of participation to demand accountability from both media and government. The interactions between professional journalists and non-journalists such as bloggers or forum discussants were noticed in the study. As new media was one of the sources for mainstream media, an emerging symbiosis for news reporting between communication

professionals and amateurs is emerging, providing new possibility for media development in China.

As to the new media and Internet users who practice participatory journalism and crowdsourcing in the burgeoning domain, it seems they are still in an early stage of development, although certain influence has been exerted. New media technologies such as comments, multimedia and hyperlinks have not been fully explored. Gender differences and occupational differences may show us that the online sphere in China is dominated by a small number of the population who are the hard core of Internet users in China. Nonetheless, no matter whether people participate intentionally in citizen journalism online to practice news reporting, or they randomly involve themselves in the crowdsourcing and participatory journalism practice to contribute their knowledge and help news organizations with news making and news dissemination, Chinese Internet users have started to utilize the new media tools to promote the public agenda, which is the foundation of a public sphere that barely existed in China before. With such efforts by citizens online, the Chinese government is under more pressure (i.e., citizens studied the website of AQSIQ to learn about the dysfunction of the agency), and is more likely to yield to the united public voice in policy-making (i.e., the resignation of the head of AQSIQ). Therefore, the advent of new media and citizen journalism online not only has changed the media landscape but is also transforming the social and political landscape in China.

Limitations

This study suffers from several limitations that should be taken into account when evaluating the results and weighing the conclusions.

One limitation of this research is the sample for analysis. Eight major Chinese newspapers were selected to represent the traditional media agenda for the study based on their availability and representativeness. However, there are a huge number of other print media outlets and broadcasting media outlets, which work together to set the media agenda. For online media, only 80 blogs were chosen from the countless Chinese blogs online. Because there was no complete directory or ranking of Chinese blogs available, although the researcher tried every possible way to collect blogs from popular blog portals, newspaper/TV websites, and parenting websites, determining their popularity based on the number of time they were read and recommendation by the hosting websites for sampling, they may still not be the ideal sample for research. In addition, given the censorship of the Internet in China, some blog posts or forum threads that were very critical toward the government on the tainted formula scandals may already have been removed before the researcher started sampling. All these sampling limitations may have an influence on the findings.

This was an issue-specific quantitative study. So only the content related to the tainted formula incidents were sampled and analyzed, hence limiting generalizability of the results. For example, it is possible that the findings on the framing or sourcing patterns on newspapers or findings about the interactivity in Chinese new media are specific to the coverage of the tainted formula incidents. Because they may not be representative of the overall media sphere in China, the results of this study should be understood with caution and the conclusions should be drawn carefully when referring to the broad contextual meanings and implications.

On a related note, because this is a quantitative study using content analysis that is basically descriptive, considering this limitation of the research method, it is difficult to explore further reasons for the phenomena and draw conclusions about causalities.

Another potential limitation of this investigation is that the process of integrating initial different story focus categories into summative groups may have negated some of the subtle qualities of each story's focus. Through factor analysis, the original 19 categories were collapsed into five single story foci. Although such a reduced categorization scheme may ignore some of the subtle differences among the original story foci, it does provide a more integrated and parsimonious structure that facilitated cross-medium analysis and comparison.

Future Research

This study extensively examined the coverage of the tainted formula incidents in Chinese newspapers, blogs and forums. The tainted formula incidents as a public health crisis provided a meaningful context for the analysis of government/media discourse and public discourse in China as well as the comparison between them. Future research may examine discourse on other issues such as political events, economic/business issues, natural disasters, or lifestyle subjects in traditional and new media, so as to draw a full picture about how journalism is practiced in China today. More media could be used for investigation. For example, more newspapers, blog posts and forum threads could be included in the sample. Moreover, emerging new media such as micro-blogging, which is currently gaining more and more popularity among Chinese netizens, could also be used for future study.

Looking beyond agenda-setting, there are a variety of other theories or theoretical frameworks that could provide future guidance to understanding the role of new media

in Chinese media landscape. For example, future researchers could draw on the gatekeeping theory to examine the process of information flow and the gatekeeping function of different practitioners (i.e., professional journalists, bloggers, forum posters, micro-bloggers, etc.) in communication, asking questions such as whether the gatekeeping process or the role of gatekeepers is changing.

For future research about new media in China, several possibilities could be taken into consideration. Building on the findings about new media in this study, future researchers could use surveys, interviews, or focus groups to analyze the motivations of online users in activities such as news reading, blogging, online discussion, linking, etc., exploring the pressure and barriers they face in online practice, as well as their attitudes toward new media technologies. Also, differences between those hardcore participants in crowdsourcing or participatory journalism and those who are less interested in participation may be explored. Moreover, Chinese journalists can be interviewed to find out whether they are influenced by the competitions from independent media online and what their possible reactions are.

Interactivity is a key characteristic of new media. More dimensions could be included in its measurement. Moreover, future research should attempt to measure the effects and effectiveness of interactivity, asking questions like whether and how readers' perceptions of content on new media is influenced by the interactive and multimedia features, etc. in China. In addition, it will be interesting to find out more about gender differences and medium differences in the new media sphere in China.

Finally, future research should pay more attention to the development of new media in China. With its traditionally controlled media environment, Chinese online

media provide an interesting case for communication researchers to explore. The general developing trends, structure of digital sphere, and the political and social implications of new media in China are worth further examination.

The development of newspapers and coffeehouses was recognized by Habermas (1989) as the most important contributor to the transformation of public sphere in Europe in the 18th century. The findings of this study reveal that the Internet and online citizen media such as blogs and discussion forums may play a similar role in today's China, as they are giving birth to an emerging online public sphere that challenges the representational culture by the government and gives people opportunities to speak out. The development of citizen participation due to the new media technologies promotes the sharing of information and views with less control from the government, hence bringing in liberalization to journalism and mass communication. Public conversations facilitated by the Internet make it possible for more civic deliberations, which are the cornerstones of a democratic society where the public has more say. With such transformation of public sphere, new media and new China are on the horizon. The results of this study have tapped into that transformation, providing a new framework from which other studies can further investigate this topic.

APPENDIX A
NEWSPAPERS AND ONLINE FORUMS FOR STUDY

Table A-1. Chinese newspapers selected for analysis

Newspapers	Circulation	Influence	Party/Metro
People's Daily	2,350,000	National	Party
Beijing Youth News	680,000	Regional with national influence	Led by Chinese Youth League
Southern Metropolitan News	1,580,000	Regional with national influence	Metro
Oriental Morning Post	--	Regional	Metro
Xinmin Evening News	1,100,000	Regional	Metro
Changjiang Daily	400,000	Regional	Party
Chutian Metropolis Daily	1,300,000	Regional	Metro
Hebei Daily	410,000	Regional	Party

Sources: Willings Press Guide, 2009; China Media Guide, 2008.

Table A-2. Chinese online public forums selected for analysis

Forum	Web address	Affiliation
Tianya	http://www.tianya.cn/	Independent (commercial portal site)
Sina	http://bbs.sina.com.cn/	Independent (commercial portal site)
Sohu	http://club.sohu.com/	Independent (commercial portal site)
Qiangguo	http://bbs1.people.com.cn/	Affiliated with the <i>People's Daily</i> (traditional media site)
Xinhua	http://www.xinhuanet.com/forum/index.htm	Affiliated with the Xinhua News Agency (traditional media site)

APPENDIX B
RESULTS OF INTERCODER RELIABILITY

Table B-1. Intercoder reliability for each variable (Krippendorff's Alpha)

Variables	Newspaper	Forum	Blog
Newspaper/Forum/Blog	1	1	1
Date	1	1	1
Story origin/Forum section	.93	.91	--
Type of blogger	--	--	1
<i>Story focus</i>			
Infected symptoms	.90	1	.97
Information on spread	.98	.87	.90
Dairy products identified	.94	.87	.91
Formula recall	.93	.92	1
Guidelines for handling the tainted formula	.93	.83	.85
Guidelines for seeking medication	.95	1	.95
Compensation to victims	1	.88	1
New regulations & food/milk monitoring system	1	.93	.96
Economics of the incidents	.85	1	.96
Health/medical issues related to food safety	.92	.88	1
Politics of the incidents	.87	.81	.90
Possible causes for the incidents	.89	.90	1
Problems of the food industry, health agencies, and government	.94	.90	.97
Potential responsibility takers	.85	.89	.95
Actions by government/health agencies	.86	.89	.92
Actions by dairy companies	.86	1	.89
Actions by individuals	.87	.91	.95
Actions by hospitals	.89	.91	1
Major focus in the story	.84	.86	.92
<i>Frames appeared</i>			
Attribution of responsibility frame	.92	--	.91
Severity frame	.84	--	.90
Action frame	.94	--	.90
Conflict frame	.87	--	.82
Economic consequence frame	.89	--	1
Reassurance frame	.94	--	.90
Uncertainty frame	.85	--	1
Other frame	.85	--	1
The most dominant frame	.84	--	.91
<i>Tone</i>			
Tone to the government and officials	.97	--	.96
Tone to dairy companies and officials	.87	--	.93
Favorable to the government and officials	--	1	--
Unfavorable to the government and officials	--	.92	--

Table B-1. Continued

Variables	Newspaper	Forum	Blog
<i>Tone</i>			
Favorable to dairy companies	--	1	--
Unfavorable to dairy companies	--	.92	--
Neutral/mixed tone	--	.95	--
No tone presented	--	.89	--
<i>Number of sources cited in each categories</i>			
Government and their officials	.87	.84	.97
Health agencies and their officials	.88	.88	.97
NGOs, independent orgs, their officials	1	1	.92
Health experts	1	1	1
Hospitals and their officials	1	1	1
Dairy companies, spokespersons, lawyers, etc.	1	1	.95
Victims' parents, family, lawyers, etc.	1	1	1
Other individuals	1	1	1
Traditional media source	.96	.92	.96
New media source	1	.87	.88
Others	1	1	.88
Gender of the author/blogger	.94	--	.92
Hits (times of being read)	--	.97	1
Replies in thread/Comments from blog readers	--	1	.97
Responses from the blogger to comments	--	.93	.94
<i>Homogeneity of discussion</i>			
Pose argument(s) to support	--	.87	.89
Propose different/opposite ideas	--	.79	.90
Mention neutral or mixed points of view	--	.83	.83
Bring in new related information/topic	--	.87	.98
Off-topic	--	.97	.94
<i>Number of hyperlinks</i>			
Internal hyperlinks	--	1	1
External hyperlinks to legacy news sites	--	1	.93
External hyperlinks to online news sources	--	1	.83
External hyperlinks to government/health agency	--	1	1
External hyperlinks to others	--	1	1
Hyperlinks to only multimedia content	--	1	1
Hyperlinks to only texts	--	1	.92
Hyperlinks to multimedia and text combined	--	1	1
<i>Number of multimedia</i>			
Embedded audio	--	1	1
Embedded video(s)	--	1	1
Embedded photo(s)/picture(s)	--	.94	1

APPENDIX C
CODEBOOK FOR NEWSPAPERS

Story qualifications:

- Include stories mainly covering the tainted formula incidents (> 400 words)
- No story compilation, duplicate, or Q&A

1. Coder ID
2. Case number: (Start with 001)
3. Newspaper
 - (1) *People's Daily* (<http://paper.people.com.cn/>)
 - (2) *Beijing Youth News* (<http://bjyouth.yinet.com/>)
 - (3) *Southern Metropolitan News* (<http://epaper.oooo.com>)
 - (4) *Oriental Morning Post* (<http://www.dfdaily.com/>)
 - (5) *Xinmin Evening News* (<http://www.xinmin.cn/>)
 - (6) *Changjiang Daily* (<http://news.cnxianzai.com/>)
 - (7) *Chutian Metropolis Daily* (<http://ctdsb.cnhubei.com/>)
 - (8) *Hebei Daily* (<http://epaper.hebnews.cn/>)
4. Story date (i.e., October 1, 2008 = 20081001)
5. What is the story origin?
 - (1) News article (i.e., regular news reporting)
 - (2) Editorial (opinion piece written by the editorial staffs or publisher)
 - (3) Opinion column by staff journalists
 - (4) Opinion column by others (i.e., health experts, economist, critics, etc.)
 - (5) Feature
 - (6) Letter from a reader
 - (7) Other
6. Focus of the story (choose ALL that appeared in the story)
 - (1) Infected symptoms (i.e., kidney stones, etc.)
 - (2) Information on spread of the incidents (i.e., finding more tainted milk formula) or the spread of the infection (i.e., infected/deaths/confirmed cases)
 - (3) Dairy products identified as contaminated (i.e., Sanlu, Shengyuan, etc.)
 - (4) Formula recall
 - (5) Guidelines for handling the tainted formula/finding untainted formula (i.e., where to return the tainted formula, etc.)
 - (6) Guidelines for seeking medication/hospitalization (i.e., possible treatment for affected children, etc.)
 - (7) Compensation to victims (i.e., how the compensation system works, etc.)
 - (8) New regulations or monitoring system (i.e., new regulations concerning food safety, new standards for milk test, etc.)
 - (9) Economics of the incidents/recall (i.e., bankruptcy of dairy companies, etc.)
 - (10) Health or medical influence of the incidents

- (11) The politics of the incidents (i.e., legal restrictions on Chinese milk formula importation in foreign countries, etc.)
 - (12) Possible causes for the incidents (i.e., outdated standards for formula safety test, etc.)
 - (13) Problems of the food industry or government agencies (i.e. government corruptcy, dairy companies' slow reactions, etc.)
 - (14) Potential responsibility takers (i.e., government should be blamed, etc.)
 - (15) Actions by government or health agency (i.e., free treatment to tainted formula victims, etc.)
 - (16) Actions by dairy company (i.e., raise fund for victim compensation, etc.)
 - (17) Actions by individuals (i.e., go to hospital for body check, stop drinking milk formula, etc.)
 - (18) Actions by hospital (i.e. provide treatment to victims, etc.)
 - (19) Others (please specify)
7. Major focus (choose ONE major focus that is the dominant theme of the story)
- (1) A description of the incidents
 - (2) Solutions
 - (3) Influence of the incidents (internationally and nationally)
 - (4) Investigation of the incidents
 - (5) Actions
8. Frames appeared (choose ALL the frames appeared in the story)
- (1) Attribution of responsibility frame: to blame the issue on the government, the dairy companies, or other stakeholders. Keywords: responsible (*zeren*), problem (*wenti*), etc.
 - (2) Severity frame: the spread of the tainted formula contamination, for example, the infected/deaths/confirmed cases. Keywords: severe (*yanzhong*), infected (*yingxiang*), panic (*konghuang*), etc.
 - (3) Action frame: any action taken by stakeholders such as the dairy company, the government or the individual, to deal with the formula scandals such as formula recall, compensation, punishment, hospitalization of sickened kids, etc. Keywords: action (*xingdong*), recall (*zhaohui*), hospitalization/medication (*yizhi*), etc.
 - (4) Conflict frame: conflicts between individuals, companies, victimized groups, the government, etc. Keywords: conflict (*chongtu*, *maodun*), etc.
 - (5) Economic consequence frame: the possible economic losses for the individuals, companies, the dairy industry or the country due to the formula scandals. Keywords: loss (*sunshi*), pay (*chuqian*), etc.
 - (6) Reassurance frame: tells the public do not need to worry or should be less worried about the formula scandals or food safety issues in China. Keywords: reassured (*fangxin*), safe (*anquan*), etc.
 - (7) Uncertainty frame: uncertainties in any aspect of the issue, including the cause, the cure, the possible spread, etc. Keywords: uncertain (*buqueding*), unclear (*buming*), etc.

- (8) Others (please specify)
9. The most dominant frame (choose ONE dominant frame in the story from above)
10. What is the tone of the story?
- (1) To government:
- Negative (hostile or aggressive language) = 0
 - Positive (optimistic, stressing logical and sensitive demeanor) = 1
 - Neutral/mixed (between or a mix of negative and positive language) = 2
 - No tone appeared (void of judgment, only statements of facts) = 3
- (2) To the dairy company:
- Negative (hostile or aggressive language) = 0
 - Positive (optimistic, stressing logical and sensitive demeanor) = 1
 - Neutral/mixed (between or a mix of negative and positive language) = 2
 - No tone appeared (void of judgment, only statements of facts) = 3
11. What sources are cited in the story? Count the number of sources from each category. If a source, for instance a pediatrician, appeared several times in a story, it is counted only once.
- (1) State/local government/agency or their officials
 - (2) Health agencies or their officials (i.e., the Chinese Center for Disease Control and Prevention (CCDC), the State Food and Drug Administration of China (SFDA), the General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ), the Ministry of Health, or other food or health related institutions)
 - (3) Non-government organizations (NGOs), other independent organizations, and their officials
 - (4) Health experts (i.e., doctor/nurse/pediatrician, professor/researcher, food/nutrition expert, etc. that were not associated with the previous three types of organizations)
 - (5) Hospitals and their officials
 - (6) Dairy companies, their spokespersons, lawyers, etc.
 - (7) Victims' parents, family, lawyers, etc.
 - (8) Other citizens, witnesses, etc.
 - (9) Newspapers, TV stations, magazines, or news agencies such as the Xinhua News Agency, and their websites
 - (10) Blogs, online forums, independent online news sites, or other citizen media
 - (11) Others (please specify)
12. Gender of the author (If there are several authors, code the gender of the first author)
- (1) Male
 - (2) Female
 - (3) Unknown (cannot discern) or no author listed
 - (4) News agency

APPENDIX D
CODEBOOK FOR ONLINE FORUM POSTS

Post qualifications:

- Include threads in online forums mainly talking about the tainted milk formula incidents
- The thread selected for analysis should include no less than 10 posts

1. Coder ID
2. Case number: (Start with 401)
3. Online forum
 - (1) Tianya (<http://www.tianya.cn/>)
 - (2) Sina (<http://bbs.sina.com.cn/>)
 - (3) Sohu (<http://club.sohu.com/>)
 - (4) Qiangguo (<http://bbs1.people.com.cn/>)
 - (5) Xinhua (<http://www.xinhuanet.com/forum/index.htm>)
4. Date of the original post in each thread (i.e., October 1, 2008 = 20081001)
5. Section of the forum (the specific subject/section that the post belongs to in the forums)
 - (1) Lifestyle/food
 - (2) Health
 - (3) Parenting/Education
 - (4) Politics/Public affairs/Laws
 - (5) Economics
 - (6) Entertainment
 - (7) Talk/conversation/gossip
 - (8) News
 - (9) Region
 - (10) Others (please specify)
6. Focus of the story (choose ALL that appeared in the thread)
 - (1) Infected symptoms (i.e., kidney stones, etc.)
 - (2) Information on spread of the incidents (i.e., finding more tainted milk formula) or the spread of the infection (i.e., infected/deaths/confirmed cases)
 - (3) Dairy products identified as contaminated (i.e., Sanlu, Shengyuan, etc.)
 - (4) Formula recall
 - (5) Guidelines for handling the tainted formula/finding untainted formula (i.e., where to return the tainted formula, etc.)
 - (6) Guidelines for seeking medication/hospitalization (i.e., possible treatment for affected children, etc.)
 - (7) Compensation to victims (i.e., how the compensation system works, suggestions for victims to seek compensations, etc.)
 - (8) New regulations or monitoring system (i.e., new regulations concerning food safety, new standards for milk test, etc.)
 - (9) Economics of the incidents/recall (i.e., bankruptcy of dairy companies, etc.)

- (10) Health or medical influence of the incidents
- (11) The politics of the incidents (i.e., legal restrictions on Chinese milk formula importation in foreign countries, etc.)
- (12) Possible causes for the incidents (i.e., outdated standards for formula safety test, etc.)
- (13) Problems of the food industry or government agencies (i.e. government corruptcy, dairy companies' slow reactions, etc.)
- (14) Potential responsibility takers (i.e., government should be blamed, etc.)
- (15) Actions by government or health agency (i.e., free treatment to tainted formula victims, etc.)
- (16) Actions by dairy company (i.e., raise fund for victim compensation, etc.)
- (17) Actions by individuals (i.e., go to hospital for body check, stop drinking milk formula, etc.)
- (18) Actions by hospital (i.e. provide treatment to victims, etc.)
- (19) Others (please specify)

7. Major focus (choose ONE major focus that is the dominant theme of the thread)

- (1) A description of the incidents
- (2) Solutions
- (3) Influence of the incidents (internationally and nationally)
- (4) Investigation of the incidents
- (5) Actions

Please follow the directions in Figure D-1 for question 8-10:

The image shows a screenshot of a forum thread with several red boxes and arrows pointing to specific elements:

- Number of hits:** Points to the text '点击: 40960'.
- Number of replies:** Points to the text '回复: 107'.
- Date of posting:** Points to the text '发布日期: 2008-9-15 10:03:00'.
- Initial entry (1st post):** Points to the first post by user '半瓶香只'.
- Second post Reply to the 1st post:** Points to the second post by user '江晨开过'.
- Third post Reply to the 1st post:** Points to the third post by user 'JACK_RYAN2001'.

Figure D-1. An example thread in online discussion forums in China.

8. Popularity of the thread: Record the number of hits for each thread
9. Responsiveness of discussion: Record the number of replies in each thread
10. Homogeneity of discussion: how the post replied to the initial entry in each thread, even if it was not a direct reply to the initial entry (i.e., it replied to the second or third entry). Count the number of replies in each thread that: (each post can only be counted ONCE)
 - (1) Pose any argument(s) to support the viewpoints in the initial entry
 - (2) Propose any different or opposite idea(s) to the initial entry
 - (3) Mention neutral or mixed points of view
 - (4) Bring in new information/topic that is related to what's in the initial entry
 - (5) Off-topic replies such as ads
 - (6) Others (please specify)
11. Tone of the thread: Count the number of posts (including the initial entry and replies) in each thread that: (a post can be counted twice. i.e., it includes information unfavorable to both government and dairy companies.)
 - (1) Include any opinion(s) favorable to government or supportive of policy/officials
 - (2) Include any opinion(s) unfavorable to government or any criticism of policy/officials
 - (3) Include any opinion(s) favorable to dairy companies
 - (4) Include any opinion(s) unfavorable to dairy companies
 - (5) Include any neutral/mixed opinion(s) concerning the government, dairy companies, or victims
 - (6) No tone presented
12. What sources are cited? For each thread, count the number of sources in all the posts in each following category. If a source, for instance a pediatrician, appeared several times in a story, it is counted only once.
 - (1) State/local government/agency or their officials
 - (2) Health agencies or their officials (i.e., the Chinese Center for Disease Control and Prevention (CCDC), the State Food and Drug Administration of China (SFDA), the General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ), the Ministry of Health, or other food or health related institutions)
 - (3) NGOs, other independent organizations, and their officials
 - (4) Health experts (i.e., doctor/nurse/pediatrician, professor/researcher, food/nutrition expert, etc. that were not associated with the previous three types of organizations)
 - (5) Hospitals and their officials
 - (6) Dairy companies, their spokespersons, lawyers, etc.
 - (7) Victims' parents, family, lawyers, etc.
 - (8) Other citizens, witnesses, etc.
 - (9) Newspapers, TV stations, magazines, or news agencies
 - (10) Blogs, online forums, independent online news sites, or other citizen media
 - (11) Others (please specify)

13. Hyperlinks (count the number of hyperlinks in each category for each thread)

Based on the destination hyperlinked to:

- (1) Internal hyperlinks
- (2) External hyperlinks to legacy news sites (newspaper, TV, news agency)
- (3) External hyperlinks to online news sites (Sina, Sohu, etc.) and citizen journalism sites (blogs, online forums, etc.)
- (4) External hyperlinks to government/health agency site
- (5) External hyperlinks to others (please specify)

Based on the content hyperlinked to:

- (6) Hyperlinks to only multimedia content (i.e., photos, videos, audio)
- (7) Hyperlinks to only texts
- (8) Hyperlinks to multimedia and text together

14. Multimedia (count the number of different multimedia that appeared in the thread)

- (1) Embedded audio
- (2) Embedded videos
- (3) Embedded pictures/photos

APPENDIX E CODEBOOK FOR BLOG POSTS

Blog post qualifications:

- Include blog posts mainly focus on the tainted milk formula incidents
- Include posts with more than 100 words

1. Coder ID
2. Case number: (Start with 601)
3. Type of the blogger (Self-identification of the blogger in blogs) (choose the major ONE only)
 - (1) Health expert
 - (2) Parent
 - (3) Journalist
 - (4) Citizen
4. Date of the blog post (i.e., October 1, 2008 = 20081001)
5. Focus of the story (choose ALL that appeared in the blog post)
 - (1) Infected symptoms (i.e., kidney stones, etc.)
 - (2) Information on spread of the incidents (i.e., finding more tainted milk formula) or the spread of the infection (i.e., infected/deaths/confirmed cases)
 - (3) Dairy products identified as contaminated (i.e., Sanlu, Shengyuan, etc.)
 - (4) Formula recall
 - (5) Guidelines for handling the tainted formula/finding untainted formula (i.e., where to return the tainted formula, etc.)
 - (6) Guidelines for seeking medication/hospitalization (i.e., possible treatment for affected children, etc.)
 - (7) Compensation to victims (i.e., how the compensation system works, suggestions to victims seeking compensations, etc.)
 - (8) New regulations or monitoring system (i.e., new regulations concerning food safety, new standards for milk test, etc.)
 - (9) Economics of the incidents/recall (i.e., bankruptcy of dairy companies, etc.)
 - (10) Health or medical influence of the incidents
 - (11) The politics of the incidents (i.e., legal restrictions on Chinese milk formula importation in foreign countries, etc.)
 - (12) Possible causes for the incidents (i.e., outdated standards for formula safety test, etc.)
 - (13) Problems of the food industry or government agencies (i.e. government corruptcy, dairy companies' slow reactions, etc.)
 - (14) Potential responsibility takers (i.e., government should be blamed, etc.)
 - (15) Actions by government or health agency (i.e., free treatment to tainted formula victims, etc.)
 - (16) Actions by dairy company (i.e., raise fund for victim compensation, etc.)

- (17) Actions by individuals (i.e., go to hospital for body check, stop drinking milk formula, etc.)
 - (18) Actions by hospital (i.e. provide treatment to victims, etc.)
 - (19) Others (please specify)
6. Major focus (choose ONE major focus that is the dominant theme of the post)
- (1) A description of the incident
 - (2) Solutions
 - (3) Influence of the incident (internationally and nationally)
 - (4) Investigation of the incident
 - (5) Actions
7. Frames appeared (choose ALL the frames appeared in the post)
- (1) Attribution of responsibility frame: to blame the issue on the government, the dairy companies, or other stakeholders. Keywords: responsible (*zeren*), problem (*wenti*), etc.
 - (2) Severity frame: the spread of the tainted formula contamination, for example, the infected/deaths/confirmed cases. Keywords: severe (*yanzhong*), infected (*yingxiang*), panic (*konghuang*), etc.
 - (3) Action frame: any action taken by stakeholders such as the dairy company, the government or the individual, to deal with the formula scandals such as formula recall, compensation, punishment, hospitalization of sickened kids, etc. Keywords: action (*xingdong*), recall (*zhaohui*), hospitalization/medication (*yizhi*), etc.
 - (4) Conflict frame: conflicts between individuals, companies, victimized groups, the government, etc. Keywords: conflict (*chongtu*, *maodun*), etc.
 - (5) Economic consequence frame: the possible economic losses for the individuals, companies, the dairy industry or the country due to the formula scandals. Keywords: loss (*sunshi*), pay (*chuqian*), etc.
 - (6) Reassurance frame: tells the public do not need to worry or should be less worried about the formula scandals or food safety issues in China. Keywords: reassured (*fangxin*), safe (*anquan*), etc.
 - (7) Uncertainty frame: uncertainties in any aspect of the issue, including the cause, the cure, the possible spread, etc. Keywords: uncertain (*buqueding*), unclear (*buming*), etc.
 - (8) Others (please specify)
8. The most dominant frame (choose ONE dominant frame in the post from above)
9. What is the tone of the blog post?
- (1) To government:
 - Negative (hostile or aggressive language) = 0
 - Positive (optimistic, stressing logical and sensitive demeanor) = 1
 - Neutral/mixed (between or a mix of negative and positive language) = 2
 - No tone appeared (void of judgment, only statements of facts) = 3
 - (2) To the dairy company:
 - Negative (hostile or aggressive language) = 0
 - Positive (optimistic, stressing logical and sensitive demeanor) = 1
 - Neutral/mixed (between or a mix of negative and positive language) = 2

No tone appeared (void of judgment, only statements of facts) = 3

10. What sources are cited in the story? Count the number of sources in each blog post for each category. If a source, for instance a pediatrician, appeared several times in a story, it is counted only once.

- (1) State/local government/agency or their officials
- (2) Health agencies or their officials (i.e., the Chinese Center for Disease Control and Prevention (CCDC), the State Food and Drug Administration of China (SFDA), the General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ), the Ministry of Health, or other food or health related institutions)
- (3) Non-government organizations (NGOs), other independent organizations, and their officials
- (4) Health experts (i.e., doctor/nurse/pediatrician, professor/researcher, food/nutrition expert, etc. that were not associated with the previous three types of organizations)
- (5) Hospitals and their officials
- (6) Dairy companies, their spokespersons, lawyers, etc.
- (7) Victims' parents, family, lawyers, etc.
- (8) Other citizens, witnesses, etc.
- (9) Newspapers, TV stations, magazines, or news agencies such as the Xinhua News Agency
- (10) Blogs, online forums, independent online news sites, or other citizen media
- (11) Others (please specify)

11. Gender of the blogger:

- (1) Male
- (2) Female
- (3) Unknown (cannot discern) or no author listed

12. Times being read (count the number of times being read for each blog post.)

13. Reader comments (count the number of reader comments for each blog post. If comment was forbidden by the blogger, code 999.)

14. Bloggers' responses (count the number of comments left by the blogger. If comment was forbidden by the blogger, code 999.)

15. Type of reader comments (count the number of reader comments in each category)

- (1) The comment supports the viewpoints in the blog post or proposes similar idea(s)
- (2) The comment mentions or proposes different or opposite idea(s)
- (3) The comment is neutral or mixed (neither supportive or opposite, or both supportive and opposite)
- (4) The comment is off-topic (i.e., ads)
- (5) The comment brings in new information that is related to what's in the blog
- (6) Others (please specify)

16. Hyperlinks (count the number of hyperlinks in the content posted by the blogger)

Based on the destination hyperlinked to:

- (1) Internal hyperlinks to posts by this blogger

- (2) External hyperlinks to legacy news sites (newspaper, TV, news agency)
- (3) External hyperlinks to online media sites (i.e., independent online news site like Sina, citizen journalism sites like blogs, etc.)
- (4) External hyperlinks to government/health agency site
- (5) External hyperlinks to others (please specify)

Based on the content hyperlinked to:

- (6) Hyperlink to only multimedia content (i.e., photos, videos, audio)
- (7) Hyperlink to only texts
- (8) Hyperlinks to multimedia and text together

17. Multimedia (count the number of different multimedia in the content posted by the blogger)

- (1) Embedded audio
- (2) Embedded videos
- (3) Embedded pictures/photos

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BIOGRAPHICAL SKETCH

Fangfang Gao was born in Hangzhou, China. She received her B.A. in Journalism and Communication as well as a bachelor's degree in finance, economics, from Zhejiang University, China, in 2005. During her college time, she was a reporter for the campus newspaper. Prior to her graduate study in the U.S., Gao worked in the Chinese government for one year. She graduated from University of Florida in August 2008 with the M.A.M.C degree and continued studying at UF to pursue a Doctor of Philosophy in mass communication. In 2011, she received her Ph.D. from the University of Florida.

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