

How Chinese newspapers seek safe ground in framing “haze”

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Abstract

In recent years, China’s polluted air, which contains PM_{2.5} and PM₁₀, has seriously affected the health of the Chinese population. This paper investigated how newspapers frame “haze,” the term commonly used in China for air pollution, and explored whether journalists from commercial newspapers framed haze in a different way compared to journalists from party-organ newspapers. After analyzing news coverage of haze from the party-organ newspaper People’s Daily and the commercial newspaper Qilu Evening Newspaper from 2011 to 2016, this study found no difference in the way each paper framed haze. Both newspapers primarily blamed individuals for the problem and engaged in propaganda for the Chinese Communist Party.

Keywords: haze, air pollution, political economy of Chinese media, framing

1. Introduction

Recently, the air pollution issue in China has gained widespread attention from media outlets all over the world. In fact, more than 10 years have passed since poor air quality became a serious problem for millions of Chinese people. Greenpeace and Peking University School of Public Health (2015) jointly released the report “Dangerous Breathing 2,” which estimated that 257,000 people across China had died due to PM_{2.5} (PM_{2.5} refers to particulate matter with an aerodynamic diameter smaller than 2.5 μm.)

Since the U.S. Embassy in Beijing first reported that the PM_{2.5} levels were above the acceptable limits of the Air Quality Index (AQI) in November 2010, the air pollution issue in China has gained widespread attention. According to the U.S. Embassy in Beijing, PM_{2.5}, which is a standard measure of air quality recognized by the U.S. Environmental Protection Agency, refers to “fine” particulates that can result in health problems. Using AQI to measure different levels of air quality in China, the U.S. Embassy found that PM_{2.5} had reached 595, exceeding the limit of 500 of AQI (Watts, 2010). Furthermore, the PM_{2.5} report from the U.S. Embassy was much higher than the PM_{2.5} report from the Beijing Environmental Protection Bureau (BEPB) at that time. This inconsistency attracted Chinese attention to the issue of air quality. In November 2011, the Xinhua News Agency reported that the U.S. Embassy’s PM_{2.5} report was higher because embassy workers wanted more allowance for healthcare from the U.S. government (Chen, 2011), an explanation that appears to have been propaganda for the People’s Republic of China (PRC).

As Tuchman (1978) suggested, “the news frame organizes everyday reality, and the news frame is part and parcel of everyday reality.” People tend to perceive the social reality created by the media rather than “real-world” reality, and the ways in which newspapers create words or symbols to influence the public can

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influence Chinese public perceptions of the Chinese Communist Party and the rest of the world. Furthermore, few scholars (e.g., Zhao, 1998; Lee, 2001) have argued that Chinese commercial media have had more professional autonomy than party-organ media in framing news since the commercialization of Chinese media in 1979. In other words, the social reality presented by commercial media may differ from that by party-organ media in China.

Thus, this study used content analysis to analyze how Chinese party-organ media and Chinese commercial media framed “haze.” This analysis of news reporting should reveal whether Chinese journalists working for these two media framed haze differently and thus further shed light on the nature of Chinese news reporting, and the degree to which reporters follow the status quo or remain unchanged. The findings should reveal the degree to which Chinese journalists working in commercial media are free to attribute pollution problems to government policy and to call for more responsible intervention from government officials.

2. Literature review

Some time has passed since scholars used the *Four Theories* to describe the Chinese media’s propaganda function. Siebert, Peterson and Schramm (1956) described “the differences between press systems in full perspective, . . . to see the social systems in their true relationship to the press.” Among the four theories (i.e., authoritarian, libertarian, communist, and socially responsible), the “communist” approach described the Chinese media.

According to this theory, mass media are instruments of the government and an integral part of the state. They are owned and operated by the State and directed by the Communist Party or its agencies. Mass media are supposed to do what is best for the State and Party; and what is best is determined by the elite leadership of the State and Party (Siebert, Peterson and Schramm, 1956).

The general assumption of the communist approach is that Chinese journalism can only follow the instructions given by the Communist Party and may not undergo commercialisation nor adhere to the principles of social responsibility.

Some scholars criticized the typologies of *Four Theories* as being too general to account for the nuances of Chinese media (e.g., Merrill and Lowenstein, 1971; Robinson, 1977). Researchers have argued that Chinese media have changed in various ways since the publication of *Four Theories* (e.g., Chang, Chen and Zhang, 1993). Huang (2003) provided three arguments for that hypothesis that the communist theory does not accurately characterize Chinese media. First, Chinese media have incorporated additional functions, such as advertising and entertainment, during the post-Mao era. Therefore, they are no longer exclusively serving the Chinese Communist Party (Robinson, 1981). This shift underscores the problem with the communist theory in *Four Theories*, which presents a “timeless structure of idea by confusing history with theory” (Berry, 1995). Second, Chinese media in the post-Mao era have become more flexible and innovative as a result of “the news media’s increasing marketization and financial independence from the government” (Huang, 2003). Third, the communist theory has failed to recognize the achievements of the government; Chinese Communist party has used media resources to serve constructive educational goals (Huang, 2003).

Lee (2001), another critic of *Four Theories*, concluded not only that the “communist” label was too broad, but also that a single neo-Marxist “political-economy” framework was too general. He also concluded that radical Marxists present a “top-down” approach to political economy, in which “the market can be seen as betraying the ideals of democracy and distorting the public sphere” while pluralists offer a “bottom-up approach” in which media professionalism can “promote the diversity of opinions and empower the media to

balance the established power.” The current study adopts the “bottom-up approach” of liberal pluralism.

The political economy of Chinese media is ambiguous. The commercialization of Chinese media can be traced back to the “Economic Reform” of 1979, brought on by Deng Xiaoping. According to Winfield and Peng (2005), “Deng’s remarks broke down the ideological barriers to commercialization by arguing that the market is only a mechanism for economic development.” Thus, during that period, the news media competed with other well-established media for advertising revenue. However, after the Tiananmen Square Protest, the government took back the power over the media and forced all news organizations to engage in self-censorship (Zhao, 1998). Media self-censorship has become the status quo in China (Polumbaum, 1997). Even though commercialized media outlets have proliferated and become more efficient in competing with the party-organ press for advertising revenue, media outlets have retained their party-organ function by positioning themselves as a “common ground between the Party and the people” (Zhao, 1998). Zhao (1997) examined *Beijing Youth News* as an example. This media outlet entered the market in the early 1990s, enjoying an increase of 36.5% in subscription and news-stand retail in 1993. Their news reports, besides distributing information, also promoted the official government ideology and therefore Zhao (1997) stated that the newspaper was selling “the official ideology with a profit.” Zhao (1998) argued that *Four Theories* no longer applied to the Chinese situation because the media’s propaganda function had been commercialized. Journalists in China were “dancing with chains on.”

2.1 System of professions and journalism routines

If Chinese journalists have been “dancing with chains on,” then how heavy are the chains? To what extent do Chinese journalists have autonomy to create symbolic content and challenge political power? In other words, what professional autonomy do they have? For political economy theorists, as cited in Waisbord (2013), “journalists’ professionalism is inseparable from major transformations in the economic structure of the press.” Sociocultural scholars, on the other hand, have argued that journalists seek autonomy to build symbolic power. Overall, through these transformations, Chinese journalists might be repositioning themselves to gain or maintain autonomy through journalistic professionalism.

According to the sociological approach of the “System of Professions,” occupations struggle to maintain their “jurisdiction” over areas of work when confronting challenges, such as uncertain economic, political, or technological environments and rival occupations (Erizkova and Lowrey, 2010). Erizkova and Lowrey (2010) noted that journalists must reposition their subjective situation to achieve objective professional goals in the face of competition. After interviewing journalists from a Russian province, most of whom had challenged authority during the perestroika period and, Erizkova and Lowrey (2010) found that in the face of renewed governmental pressures in the post-perestroika era, journalists repositioned their goals in order to maintain some measure of autonomy and stay connected with their communities and readers. The professional ideologies of these Russian journalists fragmented when they faced severe government constraint and economic difficulty, and they were largely unable to produce or publish political content in an autonomous way. However, they were able to produce non-political content that they felt was meaningful to people’s daily lives.

Scholars who have analyzed media content to determine how Chinese journalists have repositioned themselves under the economic reform found that journalists did not tend to frame news in ways that were beneficial to the public. For example, Fung (2007) analyzed how Hong Kong media chose to report sensitive Chinese issues after Hong Kong was transferred to the People's Republic of China in 1997. His results show that diversity of media content in Hong Kong decreased and that new Hong Kong media owners avoided “embroiling themselves in the political struggle between the local and the Chinese authorities.”

2.2 Media framing of environmental pollution

Taking the sociocultural roles of news outlets into consideration, media framing of environmental issues could shed light on the tensions among the economy, politics, and journalism. Some scholars have claimed that with the growth of mass media outlets, journalists have tended to ignore the social responsibility function (e.g., Bagdikian, 2000; McManus, 1994). One possible cause of this functional shift might be the commercialization of media.

Kenix (2005) analyzed 1,180 U.S. articles about environmental pollution from 4 newspapers over a 29-year period and found that 72.9% of the coverage attributed air pollution to industry and 78.7% of the coverage attributed it to government policy. By studying media framing of environmental issues, researchers can observe whether journalists are influenced by their economic sponsors and whether they are free to challenge authority. Based on Kenix's study, journalists in the U.S. maintained autonomy by creating symbolic content to do socially responsible work.

Some scholars have explored how Chinese commercial media and party-organ media frame environmental pollution. For instance, Tong (2014), in an analysis of both commercial and party-organ newspaper reports on pollution from 2008 to 2011, found that economic development was regarded as the principal cause of environmental problems. However, Tong found that 28.9% of investigative reports blamed government policy, 21.2% attributed pollution to industrialization and modernization, 37.9% blamed commercial organizations and individuals, and only 0.6% mentioned global warming as the cause. The differences between party-organ media and commercial media were not significant. These results suggested Chinese media have some freedom to attribute the cause of pollution to the government and corporations, even though this freedom is curbed. However, Zu (2015) analyzed the environmental pollution reports of party-organ media outlet *China's Daily* which were published in 2013 and found that roughly 47% of the stories made no mention of any cause for air pollution and that the rest blamed coal burning, industrial emissions, vehicle exhaust, fireworks, farmers, etc. In other words, *China's Daily* did not openly hold the government responsible.

Two reasons could explain these different results. The first is the fact that *China's Daily* is a party-organ media outlet. From a liberal-pluralist perspective, journalists in party-organ media have less freedom than journalists who work for professional or commercial media agencies. The second is that management of environmental pollution news framing was stricter in 2013 than in 2011 because pollution had become more severe and the target of more complaints from the Chinese public. To determine other possible reasons, longitudinal comparison of environmental pollution framing by party-organ newspapers and commercial newspapers is needed. Hence, one research question was postulated:

RQ₁: How did news coverage of haze change during the six years for which samples are published in the two newspapers?

Many scholars argued that the "four theories" model is no longer applicable to Chinese media due to the differences existing between party-organ media and commercial media. Therefore, we assumed that some differences would emerge between the party-organ newspaper *People's Daily* and the commercial newspaper *Qilu Evening Newspaper (Qilu)*. Several hypotheses and research questions were generated:

RQ₂: How was the coverage of haze different between the two newspapers?

RQ₃: Among individuals, industries, and government, which entities were regarded as most responsible for cleaning up haze in the coverage by the two newspapers?

H_{1a}: News coverage by *People's Daily* will be less likely than coverage by *Qilu* to frame air pollution as caused by the government than caused by individuals and industries.

H_{1b}: News coverage by *Qilu* will be more likely than coverage by *People's Daily* to frame air pollution as

caused by the government than caused by individuals and industries.

- H_{2a}: News coverage of haze by *People's Daily* will be more likely than coverage by *Qilu* to frame air pollution as a problem being solved through government intervention than through individual and industrial behavior.
- H_{2b}: News coverage of haze by *Qilu* will be less likely than coverage by *People's Daily* to frame air pollution as a problem that should be solved through government intervention than through individual and industrial behavior.
- H_{3a}: News coverage of haze by *People's Daily* will provide fewer suggestions for government intervention in the air pollution problem than for intervention by individuals and industries.
- H_{3b}: News coverage of haze by *Qilu* will provide more suggestions for government intervention in the air pollution problem than for intervention by individuals and industries.

The System of Professions approach indicates that journalists will try to maintain their jurisdiction in the face of government constraints by repositioning their goals through higher-order challenges at the government or commercial level. Erzikova and Lowrey (2010) found that some local journalists in Russia, facing powerful constraints from political and business elites, shifted to providing information that was focused less on politics, and more on the practical daily needs of their readers. Additionally, Zhao (1998) argued that since the Tiananmen Square protest, Chinese commercial media have always been seeking “common ground between the government and people.” Therefore, Chinese journalists may remind their readers of the detrimental effects of haze to their daily lives. Thus, one hypothesis was assumed:

- H₄: News coverage of haze by *Qilu* will be more likely to frame individuals as most affected by air pollution than *People's Daily*.

3. Method

The current study sampled the content of *People's Daily* and *Qilu* for analysis for three reasons. First, *Qilu* is the biggest commercial newspaper in the Shandong province, which has suffered from heavy haze pollution over the past several years. Second, instituted in 1988 and a subsidiary of Dazhong News Corporation, *Qilu* is a widely-read commercial newspaper, with a daily circulation of 850,000. Third, *People's Daily* is the most important party-organ media outlet, with a circulation of 3 millions.

The sample was collected from the digital libraries of these two newspapers. Because “haze” (*Wu Mai*) is also frequently used to refer to official corruption and people’s negative feelings and because we wanted to focus more on air pollution, we first had to differentiate between the various uses of this term in newspaper headlines. First, we downloaded PDF versions of all articles from the two newspapers that included the keyword “haze” in the headline. We found that the earliest usage of “haze” to refer to air pollution occurred in 2011. Thus, we analyzed articles about “haze” from January 2011 to December 2016. The total number of headlines that contained the appropriate usage of “haze” in the *People's Daily* was 136, and the total number for *Qilu* was 1445.

To make the two newspaper samples more comparable, we used constructed sampling to create four constructed weeks for *Qilu*. We used the calendar as the sampling frame. A coder then identified all 52 Mondays in one year, each of which is considered as the first day of the week. This step was repeated for each day of the week to ensure that “each source of cyclic variation is represented equally, thus controlling for systematic variation” (Song and Chang, 2012). Riffe et al. (1993) found that one constructed week could represent a six-month period of daily publication. Song and Chang (2012) also found that constructed week sampling was

more representative than simple random sampling or consecutive day sampling of Chinese daily newspapers. Their results suggested that two constructed weeks could represent a six-month period of daily publication. Thus, we constructed four weeks to represent one year of *Qilu*. In 2011 and 2012, the number of news reports about haze from *Qilu* was 14 and 7, respectively. Due to the limited news coverage in 2011 and 2012, we only applied constructed week sampling to news coverage between 2013 and 2016. Overall, the total number of news reports from *Qilu Evening Newspapers* we analyzed was 136, equal to the number of 136 reports we analyzed from *People's Daily*.

3.1 Coding procedure

To answer RQ₁, trending graphs are generated to observe the frequency of reporting on the haze problem in the two newspapers. To test H_{1a} and H_{1b}, the themes of cause for government, industries, individuals, and natural forces were coded. The news coverage of solutions provided by government, industries, and individuals was coded to test H_{2a} and H_{2b}. When analyzing the articles, it was found that natural forces were also frequently mentioned as a solution to haze. Thus, the category of natural forces was added to the themes of solutions. To test H_{3a} and H_{3b}, which proposed that *Qilu* would provide more suggestions for government intervention than *People's Daily*, the coding category was news coverage of solutions that government, individuals, or industries might try. For RQ₂, responsibility of government, individuals, and industries were coded additionally. To test H₄, news coverage of the effects of air pollution on individuals, communities, society, and infrastructure were also coded. Based on these five categories (i.e., cause, responsibility, effects, solutions, and suggestions), 17 themes were identified (see Table 1.). After all data were analyzed and reported in actual number, chi-square analysis was done to determine any significant differences between the two newspapers. Because the number of articles from the two newspapers was identical in this study, we used .50 as an expected frequency for each individual category.

Table 1. Coding categories for haze coverage

Themes	Description
1. Caused by government	Inadequate governmental oversight, lack of governmental policy, or malfeasance of governmental officers
2. Caused by industries	Failure to clean emissions, magnitude of emissions, economic development, disregard for governmental regulations
3. Caused by individuals	Automobile, heating appliances, burning wood, coal, oil, or gas, household gardening, etc.
4. Caused by natural forces	Due to geography, haze does not disperse. Without wind, rain, or snow, haze becomes heavier.
5. Responsibility of government	Call for stricter policy or laws to regulate industries and individual vehicle usage
6. Responsibility of individuals	Call for less automobile-use and more involvement in cleaning air pollution; engage in more responsible behavior
7. Responsibility of industries	Call for more efficient machinery and cleaner output
8. Effect on infrastructure	haze influences routines of flights, trains, and typical traffic
9. Effect on individuals	haze causes personal sickness, absence from school or work

Themes	Description
10. Effect on community/society	haze affects commodity pricing, water sources, school shutdown, or regular work schedule
11. Solutions from government	New laws that help clean up haze, President Xi's new directions for cleaning up haze, governmental reports on cleaning up haze
12. Solutions from industries	Use of more efficient machines that pollute less; making fewer pollutive products, such as fireworks
13. Solutions from individuals	Lower usage of coal, gas, and oil; more frequent usage of public transit; planting more trees
14. Solutions from natural forces	Windy, rainy, or snowy weather clears the air
15. Suggestions for government	Take action to clean up haze, such as issuing stricter laws to reduce industry pollution, using renewable energy, providing more convenient public transit, reforming local government policy
16. Suggestions for industries	Use water to prevent floating dust, use devices to clean up emissions, such as desulfurization devices, ash handling equipment, etc.
17. Suggestions for individuals	Protect against haze by wearing filter respirator, exercise less outside, use air purifiers, use public transit

Reliabilities were determined for five categories: (a) cause of haze ($\kappa = .94$), (b) responsibility for cleaning up haze ($\kappa = .91$), (c) effect on individuals, infrastructure, communities, and society ($\kappa = .85$), (d) solutions for the haze problem provided by individuals, industries, and government ($\kappa = .92$), (e) suggestions for government, individuals, and industries to clean up and prevent haze ($\kappa = .89$). Two coders coded a total of 272 articles from the two newspapers (136 for each paper). Using Cohen's Kappa (1960), the inter-rater reliability of the two coders reached 95%.

4. Results

The total number of articles with "haze" in the headline from *Qilu* was 1445 (only 136 from *People's Daily*).

Figure 1. Frequency of reports of haze in *People's Daily* and *Qilu Evening Newspaper* from 2011 to 2016

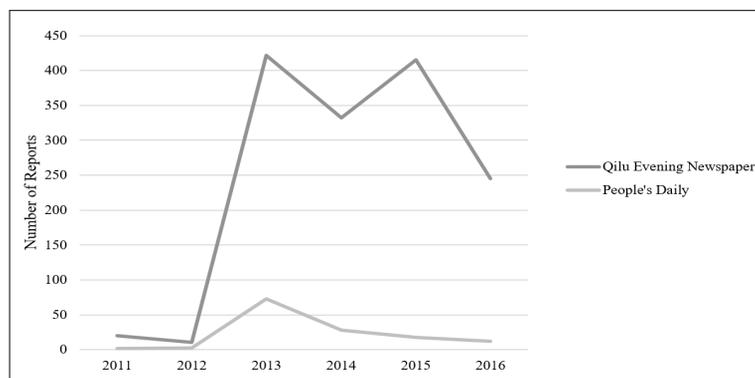


Figure 1 shows the frequency of all news reports mentioning haze in their headlines from 2011 to 2016. During that six-year period, news coverage of haze by *Qilu* increased tremendously after 2013. Even though we also observed an increase in haze reporting in *People's Daily* in 2013, it did not continue to rise after 2014. This discrepancy suggests that journalists working for *Qilu* seemed to have more autonomy than journalists working for *People's Daily* to report about haze.

RQ₁ asked how haze coverage by the two newspapers changed over the six years. Figures 1, 2, 3, and 4 all show that the number of reports on haze suddenly increased in *People's Daily* in 2013 and then dropped after 2014. There are several possible explanations for such trend. First, Chinese Premier Li Keqiang enacted numerous policies to improve haze after he took office in March 2013; these policies might also explain why news reports in both *People's Daily* and *Qilu Evening Newspaper* mentioned governmental solutions so frequently in 2013. Second, heavy haze had a big impact on the daily lives of people living in the northern and eastern cities and provinces from Nov. 28 to Dec. 18, 2013. According to *Xinhua News Agency*, 25 provinces were seriously affected by haze (“Twenty-five provinces experienced highest air pollution levels ever recorded,” 2017). Third, the decrease in frequency of reports on haze might be related to Chai Jing’s documentary *Under the Dome* (2015). In 2015, red alerts, which cautioned people about heavy air pollution, were activated (“China smog sparks red alerts in 10 cities,” 2015). However, fewer than 20 *People's Daily* news reports mentioned haze in 2015 and 2016, perhaps because public complaints about haze increased after the online release of *Under the Dome* on Feb. 28, 2015. It garnered 117 million views and 280 million posts within 24 hours before being censored (Cui, 2017). While over 75% of viewers were willing to restrict car usage, viewers were also told that official bureaus, emission companies, and legislatures should all be held accountable for haze. Indeed, Chai Jing criticized both China Petrochemical Company and Chinese Oil and Gas Company, both of which were state-owned corporations. In other words, Chai Jing indirectly criticized the government, and viewers acknowledged the disadvantages of existing government policy. The consequence was that overall reports about haze decreased tremendously in *People's Daily* in 2015. Although we found 415 reports by *Qilu* in 2015, they still primarily mentioned governmental solutions and engaged in propaganda for the Chinese Communist Party.

Figure 2. Chronological frames on government by *People's Daily* vs. by *Qilu Evening Newspaper*

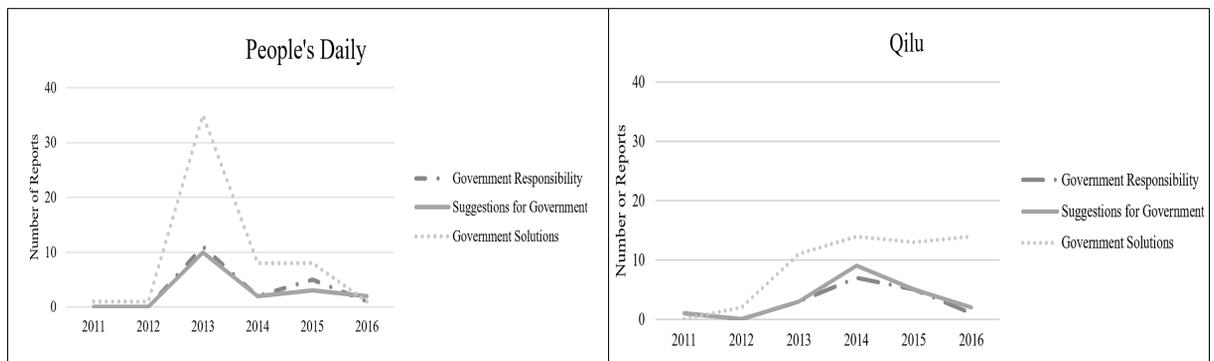
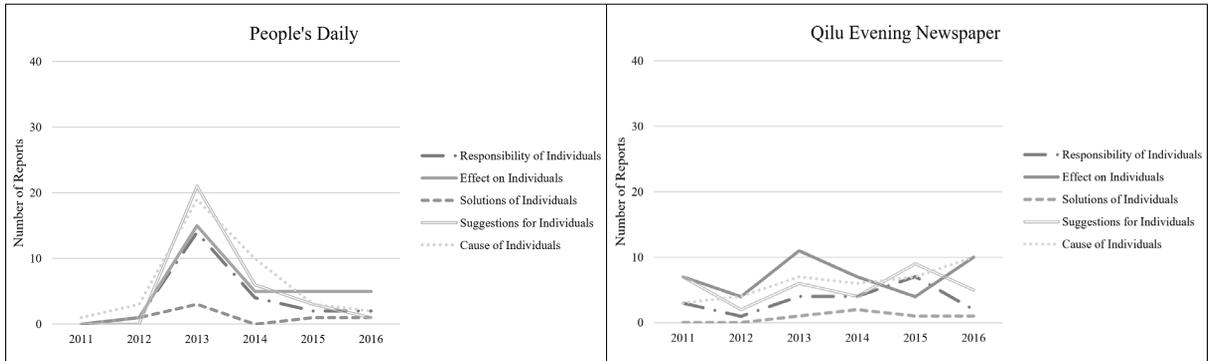
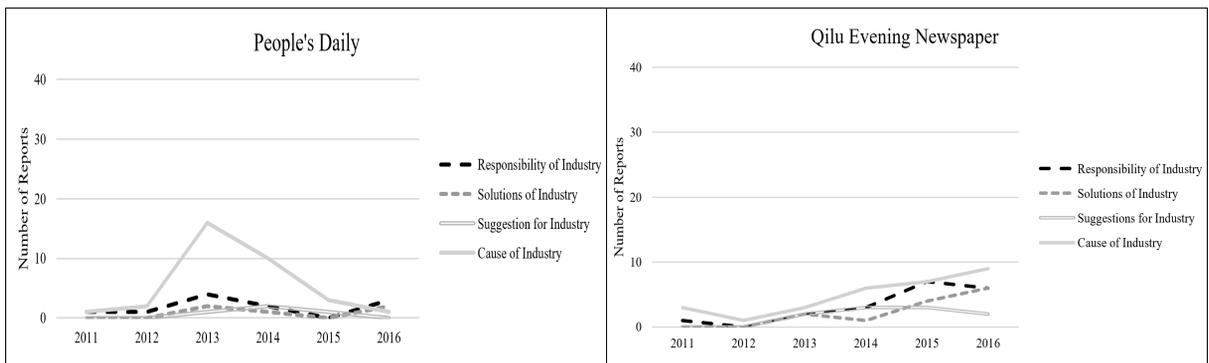


Figure 3. Chronological frames on individuals by *People's Daily* vs. by *Qilu Evening Newspaper*Figure 4. Chronological frames on industry by *People's Daily* vs. by *Qilu Evening Newspaper*

RQ₂ asked about differences in coverage of haze by the two newspapers. Results of chi-square tests revealed no significant difference between *People's Daily* and *Qilu* among all coding themes. As Table 2 shows, the two newspapers also did not differ much in how often they reported the various themes that emerged from our coding process. Our results are consistent with Tong (2014), who compared how nine Chinese commercial newspapers and *People's Daily* framed environmental pollution and found no significant differences.

Among individuals, government, and industries, we found no significant difference in framing responsibility for cleaning up haze, answering RQ₃.

H_{1a} predicted that *People's Daily* would be less likely to frame haze as caused by the government than by individuals and industries. Previous studies have investigated how Chinese newspapers framed environmental pollution as caused by the government (Tong, 2014; Zu, 2015), but their results were inconsistent. Findings from the current study show that only 4% of reports from *People's Daily* mentioned government as a cause, a significant difference from the number of reports that blamed industries (24%; $\chi^2 = 21$, $df = 1$, $p < .001$), individuals (26%; $\chi^2 = 25$, $df = 1$, $p < .001$), and natural forces (23%; $\chi^2 = 19$, $df = 1$, $p < .05$). Thus, H_{1a} was supported.

H_{1b} predicted that news coverage by *Qilu* would be more likely to attribute the cause of air pollution to the government than to individuals and industries. As shown in Table 2, we found little difference in haze framing in the two newspapers. When testing for differences between causes mentioned in *Qilu* reports, we found

significant differences in how often the government (4%) was blamed and how often industries (21%; $\chi^2 = 15$, $df = 1$, $p < .05$), individuals (27%; $\chi^2 = 22$, $df = 1$, $p < .001$), or natural forces (30%; $\chi^2 = 26$, $df = 1$, $p < .05$) were blamed, respectively. In other words, news coverage by *Qilu* and *People's Daily* both blamed the government less frequently than any other potential cause of haze. Therefore, H_{1b} was not supported. Our results were fairly consistent with Zu (2015), who analyzed air pollution framing in the party-organ newspaper *China Daily's* and found zero mentions of government as a potential cause. However, our findings are inconsistent with Tong (2014), who found that 28.9% of news coverage mentioned government as a potential cause of environmental pollution.

Table 2. Frequency of themes

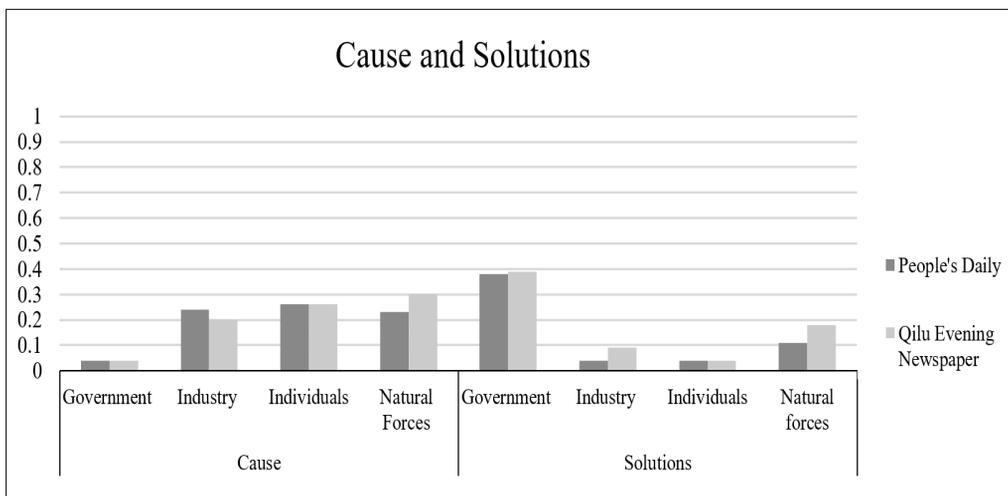
Themes	People's Daily		Qilu Evening Newspaper	
	Number	Percentage	Number	Percentage
Cause of government	5	4%	6	4%
Cause of industries	33	24%	29	21%
Cause of individuals	38	26%	37	27%
Cause of natural forces	31	23%	41	30%
Responsibility of government	18	14%	17	13%
Responsibility of individuals	23	16%	21	15%
Responsibility of industries	11	7%	19	14%
Effect on infrastructure	11	8%	14	10%
Effect on individuals	31	23%	43	32%
Effect on community/society	6	4%	8	6%
Solutions from government	54	38%	54	39%
Solutions from industries	5	4%	13	10%
Solutions from individuals	6	4%	5	4%
Solution from natural forces	17	11%	25	18%
Suggestions for government	17	11%	20	14%
Suggestions for industries	4	3%	10	7%
Suggestions for individuals	31	21%	33	24%
Total	136	100%	136	100%

H_{2a} predicted that news coverage by *People's Daily* would favor governmental solutions to the haze problem. Indeed, we found that 38% of reports mentioned governmental solutions in *People's Daily*, while individuals (4%; $\chi^2 = 38.4$, $df = 1$, $p < .001$), industries (4%; $\chi^2 = 39$, $df = 1$, $p < .001$), and natural forces (18%;

$\chi^2 = 19.28, df = 1, p < .05$) were portrayed as less helpful. Thus, H_{2a} was supported.

As shown in Figure 5, we found little difference in the frequency of reporting governmental solutions between the two newspapers. The government (39%) was more frequently reported as a solution source in *Qilu* than individuals (4%; $\chi^2 = 40.69, df = 1, p < .001$), industries (10%; $\chi^2 = 25.09, df = 1, p < .001$), or natural forces (18%; $\chi^2 = 10.5, df = 1, p < .05$). Thus, H_{2b} , which predicted that news coverage by *Qilu* would be less likely to attribute solutions to government than to individuals, industry, or natural forces, was not supported. Overall, we concluded that the two newspapers were primarily propaganda outlets for the Chinese Communist Party, and both framed governmental solutions and regulation as the most efficient way to clean up haze.

Figure 5. Frequency ratios of cause and solutions



H_{3a} predicted that *People's Daily* would provide fewer suggestions for government than for individuals and for industries. Indeed, we found a significant difference between suggestions for government (11%) and (a) suggestions for individuals (21%; $\chi^2 = 24, df = 1, p < .05$) and (b) suggestions for industries (3%; $\chi^2 = 8.05, df = 1, p < .05$), respectively. Thus, H_{3a} was supported. H_{3b} predicted that *Qilu* would provide more suggestions for government than for individuals and industries. However, our results revealed that *Qilu* provided more suggestions for individuals (24%; $\chi^2 = 6.38, df = 1, p < .05$) than for government (14%) and provided less suggestions for government than for industries (7%; $\chi^2 = 25, df = 1, p < .001$). Thus, H_{3b} was not supported.

H_4 predicted that news coverage of haze by *Qilu* is more likely to frame individuals as most affected by haze than news coverage by *People's Daily*. However, the result of chi-square tests revealed no significant difference between the two newspapers. Thus, H_4 was not supported. However, we found that individuals were portrayed as being the most affected by haze in both newspapers. A significant difference emerged between effects on individuals and (a) effects on infrastructure ($\chi^2 = 14.75, df = 1, p < .05$) and (b) effects on communities and society ($\chi^2 = 25.5, df = 1, p < .001$), respectively, in *Qilu*. The same differences were found in *People's Daily* between effects on individuals and (a) effects on infrastructure ($\chi^2 = 21, df = 1, p < .001$) and (b) effects on communities and society ($\chi^2 = 18.5, df = 1, p < .05$). Overall, individuals were portrayed as being the most affected by haze in both newspapers.

In summary, we found that the news coverage sampled from both newspapers primarily framed individuals

as (a) the main cause of haze, (b) having a responsibility equal to that of the government to clean up haze, (c) being the most affected by haze, and (d) having provided fewer solutions for the haze problem than the government. Additionally, individuals were more often the target of suggestions for cleaning up and preventing haze than the government or industries in the news coverage by *People's Daily*. *Qilu* reported on haze more frequently than *People's Daily*, but no significant difference in framing haze was found between them.

5. Discussion and conclusion

Ader (1995) stated that individuals need to be informed by the media about the importance of environmental issues. Our study found that while individuals were most often the target of reminders to take responsibility for preventing and cleaning up haze, journalists at both of government and commercial media share the common view that the government was not to blame for air pollution. Environmental problems have often been used by researchers to study how journalists play a role in social change or social control, and our results suggested that journalists working for *People's Daily* and *Qilu* rarely criticize the government. Rather, they blamed industries and individuals and applauded governmental policy.

According to the System of Professions theory, journalists might be expected to reposition themselves in order to seek greater autonomy after the commercialization of media. However, we observed no significant difference between *Qilu* and *People's Daily* in haze framing. Individuals were not only framed as the primary cause of haze by both newspapers and as the ones mostly affected by haze, but they were also the target of more suggestions to clean up haze than industries or government. In this way, governmental solutions to the haze problem came across as undeserved gifts. However, similar to Erzikova and Lowrey (2010), who found that Russian journalists steered away from political reporting and limited their coverage of public problems to the distribution of individual level advice, Chinese journalists also have a tendency to avoid blaming the government and to focus on reminding the Chinese public to be careful about health issues caused by haze.

Our findings are consistent with Zu (2015) in that neither newspaper attributed the cause of haze to the government. Our finding that governmental solutions were most frequently mentioned in the two newspapers is consistent with Duan and Tkahashi (2017), who found that *China Daily* favored the topic of government strategies/solutions. The fact that no significant difference was found between party-organ and commercial newspapers in air pollution framing is consistent with Tong (2014). Little evidence suggests that commercialization of newspapers influenced haze framing. However, Tong (2014) found that 28.9% of investigative reports blamed the government, a figure that is much higher than 4% we found ourselves. Zu (2015) analyzed air pollution coverage by the party-organ newspaper *China's Daily* in 2013, whereas Tong (2014) analyzed news coverage of environmental pollution from 2008 to 2011 and Tilt and Xiao (2010) primarily analyzed news coverage of oil spills from 2005 to 2006. Our findings reflect haze framing from 2013 to 2016. Thus, the inconsistent results might reflect that censorship became stricter after President Xi took office in 2013. Tong (2014) argued that the decentralized media-government relationship "produced lacunae where journalists can gain certain autonomy." However, we did not find evidence of a high degree of autonomy in our study.

Although the number of reports on haze from *Qilu* was much larger than that from *People's Daily*, we considered the relative influence of the two newspapers. The circulation of *Qilu* (850, 000) was much smaller than *People's Daily* (3 million), suggesting that the former was less influential than the latter. From this point of view, *Qilu* might have had more autonomy in reporting about haze. However, considering that no significant difference emerged in the way the two newspapers framed the government as a cause and a provider of solutions,

even *Qilu* might not have enjoyed freedom of choice in framing haze but instead might have felt compelled to engage in propaganda.

Additionally, previous studies have suggested that newspapers were less likely to frame industry as a cause of environmental pollution due to the importance of economic modernization to the nation of China. However, President Xi has defined a “New Normal” for Chinese economic development, suggesting that economic growth should slow down due to the “high price of air pollution and exploitation of natural sources” caused by China’s rapid economic development (Xi’s “New Normal” theory, 2017). This explained that industries were more likely to be framed as the cause of haze than government in both newspapers. Although industries would seem to be a potential cause of haze, neither of the sampled newspapers provided many suggestions that targeted industries. This could be explained from two perspectives. On one hand, as the state interferes both with media and economy, criticizing industries can be regarded as criticizing the failures of governmental regulation of the economy. On the other hand, it also reflects that Chinese newspapers suffer constraints from industries although radical Marxism was usually only to criticize the capital accumulation and concertation that restrict media in advanced capitalist countries. As Lee (2001) characterizes the post-Mao era in China as “marketization of political management”, our results supported the argument that China has been in a transitional period when the liberal political economy and critical political economy coexist and intertwine uneasily and paradoxically.

There are several limitations in our study. One limitation of this study is that due to the larger number of reports on haze in *Qilu*, we used constructed week sampling to represent the time period. Even though constructed week sampling has been found to generate a more representative sample (Song and Chang, 2012; Riffe, Aust, and Lacy, 1993), we did not test the efficiency of our sample. Second, the sample exclusively focused on haze because it has become the most serious environmental issue in China. Nevertheless, news coverage on haze cannot be generalized to news coverage of other types of environmental pollution. Third, our sample is mainly articles published from 2013 to 2016, and we cannot generalize findings to other commercial newspapers. Furthermore, this study explored only two traditional Chinese newspapers. It is possible that journalists have more autonomy for creating symbolic content on social media or blogs.

Even though both sampled newspapers have frequently engaged in propaganda, Johnson, Mol, Zhang, and Yang (2017) found that only one-third of their survey participants were satisfied with solutions provided by the government to control air pollution and that participants expressed doubts about the efficacy of individuals’ efforts to solve air pollution problems. In other words, blaming individuals for haze and suggesting that they clean it up might not be an efficient way to persuade the public to behave more responsibly. Individuals might still believe that the government is more responsible for solving the haze problem. In light of this possibility, journalists should first consider the need of individuals (e.g., promoting the use of public transportation so that they are less likely to drive their own cars) and should also oversee the misconduct of governmental policy (e.g., reporting the failures or difficulties of implementing the governmental policy on haze on a national and local level). At the same time, journalists should suggest more useful ways in which the government might help individuals and industries clean up haze rather than applauding governmental policies already in effect. For example, industrial pollution was found to be the biggest cause of PM2.5 problems, whereas Beijing’s 5.5 million cars were responsible for just 4% of the smog (Zhang et al., 2013). It is crucial for Chinese government to enforce laws to reduce industrial emissions, such as promoting industrial upgrading and restructuring, increasing clean energy supply, imposing stricter approval requirements for new investments for energy-saving and environmental protection, and improving legal framework, implementation and enforcement (Zhang, Liu and Li, 2014). Only once the government solves the problems and satisfies the needs of individuals, only then they will be more likely to cooperate with governmental policy.

Overall, our study shows that commercialization of newspapers did not give journalists more autonomy in

framing air pollution. To be sure, “every newspaper when it reaches the reader is the result of a whole series of selections as to what items shall be printed” (Lippmann, 1922). Thus our results do not directly reflect journalists’ willingness to frame haze objectively but reflect Chinese journalists’ autonomy in framing haze under influences of politics in Chinese newsrooms.

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