Discursive constructions of scientific (Un)certainty about the health risks of China's air pollution: A corpus-assisted discourse study

Ming Liu[*], Yiheng Zhang

School of International Studies, Sun Yat-sen University, Xiangzhou District, Zhuhai, Guangdong, China

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ABSTRACT

This article gives a corpus-assisted discourse study of the representations of the health risks of China's air pollution (2011–2014) in Chinese and Anglo-American English-language newspapers with a view to examining their particular ways of constructing scientific (un) certainty about health risks. Findings suggest that although health information has been addressed in the two groups of newspapers, the Anglo-American English-language newspapers prefer to amplify and dramatize the certainty about health risks through such discursive strategies as predication, nomination, and the rhetoric of quantification, while the Chinese English-language newspaper is inclined to highlight the uncertainty about health risks through such discursive strategies as particularizing the Chinese context, complicating the causes of health problems, and arguing for more scientific tests.

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1. Introduction

After thirty years of rapid industrialization, China has now been confronted with the worst air pollution in the world (Yang et al., 2015). The problem has become increasingly severe in the last few years, as can be witnessed from the continual outbreaks of the all-enveloping smog in large areas of China, in particular its capital Beijing. Along with the worsening air pollution come the growing public concerns about its potential health risks (Petts, 2005). As Douglas and Wildavsky (1982, p. 10) suggest, modern individuals are afraid of 'nothing much … except the food they eat, the water they drink, the air they breathe, the land they live on, and the energy they use' (cited in Lupton, 1993, p. 425).

While it has been widely acknowledged that some chronic diseases might be affected by air pollution, such as asthma, allergies, and bronchitis, the exact causal links between air pollution and these diseases remain largely unknown (Petts, 2005). Public understanding of the health risks of air pollution tends to be shaped by not only scientific studies but also, or more importantly, the particular ways these studies are communicated. The mass media is particularly important in informing the public of emerging health risks (Tang and Rundblad, 2015), because health risks 'constantly make headlines in the news media and are increasingly the subject of public communication campaigns' (Lupton, 1993, p. 425). However, risks are not mere objective conditions out there waiting to be represented, but are rather socially constructed (Höijer, 2010; Stallings, 1990). Instead of representing health risks in a neutral way, the media may choose to construct them in their

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preferred way to advance their own socio-political agendas (Collin and Hughes, 2011), so media representations of health risks have been subject to increasing scrutiny in the last two decades (Lupton, 1993).

China's mounting environmental challenges and their communication have already drawn increased attention in academia (Geall, 2011; Ma, 2015; Shapiro, 2012; Tilt and Xiao, 2010; Tong, 2014), but the representations of China's air pollution are still under-examined, with only a few exceptions (S. Chen, 2014; Y. Chen, 2014; Xu, 2012). Even fewer are studies that address the communication of health risks of China's air pollution (Yang et al., 2015), to say nothing of a comparative study of their media representations in different socio-political contexts. Previous studies have demonstrated that the representations of the health risks of a certain issue are apt to vary with different institutions (Solin, 2004; Tang and Rundblad, 2015) and socio-political contexts (Olausson, 2009), but still little knowledge can be gained as regards media constructions of the health risks of China's air pollution in different socio-political contexts. The present study is intended to fill the gap by giving a comparative study of the representations of China's air pollution in Chinese and Anglo-American media, with a particular attention to their particular ways of constructing scientific certainty and uncertainty about its health risks.

2. Scientific (un)certainty in media representations

Uncertainty is one of the main features that characterize many issues in the contemporary world, due to either a lack of knowledge or competing interpretations of data (Friedman, 1999). This is especially visible in the communication of the health risks of some contentious issues, such as climate change, genetic engineering, nuclear power, and air pollution (Olausson, 2009), because their exact health impacts are very difficult to be determined at the present stage. Nevertheless, they are receiving extensive coverage in the media, since 'controversy and debate are important criteria for newsworthy stories' (Friedman, 1999). Media do not merely reproduce how scientists negotiate and express uncertainty, but may represent uncertainties in ways that serve their own ideological purposes. As Campbell (1985) argues, uncertainty itself does not necessarily incur controversy, but serves as a question for negotiation, decision and argument. It is a strategic element of argument rather than something that causes argument. It can be interpreted, negotiated, and constructed in multiple ways (Friedman, 1999).

The discursive constructions of scientific (un)certainty in media, therefore, have been extensively examined in the last few decades (Collins, 1987; Friedman, 1999; Olausson, 2009; Zehr, 2000). While some studies expose that journalists tend to minimize uncertainties in order to create sensational news, some others reveal that they also make scientific claims seem uncertain to serve certain purposes (Stocking, 1999). For example, previous studies on the representations of climate change in the US and the European media have revealed a high degree of uncertainty in the former but plenty of certainty in the latter, which was attributed to the different political stances and measures towards climate change in the US and the European contexts (Boykoff, 2008; Olausson, 2009; Zehr, 2000).

Similar findings have also been made on the discursive constructions of scientific (un)certainty about health risks. In an early study on the British press coverage of food poisoning in the late 1980s, Fowler (1991) suggested that it tended to be characterized by a 'hysterical style', which frequently drew upon the discourses of 'fear', 'hazard', and 'risk'. Brittle and Zint's (2003) examination of the coverage of lead health risks to children in 152 American newspaper articles demonstrated that they deliberately downplayed the certainty of health risks through confining the issue to a local news story and providing less information on health effects. Solin (2004) examined the reproduction of the causality claims between health problems and air pollution in four different genres in the United Kingdom, and demonstrated that news reports tended to strengthen the causality within scientific and government claims. Tang and Rundblad's (2015) recent study on media reporting of health risks of water contaminants in both the UK and the US has also revealed that water organization reports tended to downplay the probability and severity of the risk posed by contaminants, whereas media texts were inclined to highlight their potentiality to be an unconfirmed threat to public health.

3. Corpus-assisted discourse study

The present study combines corpus linguistics (CL) methods (Baker, 2006) and critical discourse analysis (CDA) (Fairclough, 1995; van Dijk, 1998) by adopting the corpus-assisted discourse studies (CADS) approach (Partington, 2004). The benefits of using CL methods in (critical) discourse analysis have been widely acknowledged (Baker et al., 2013). CL methods can enable discourse analysts to process large quantities of data quickly, identify significant linguistic phenomena which might otherwise be missed, reduce the researcher bias by focusing on frequency and saliency, and thus enhance the credibility of analytic results (Baker, 2006).

CL methods have been employed to investigate the meaning of *risk* (Adolphs et al., 2004; Hardy and Colombini, 2011) as well as the particular ways of constructing health risks in different contexts (Adolphs et al., 2004; Brown et al., 2009; Marko, 2010). By analyzing the lemma RISK over the last two decades in the Corpus of Contemporary American English, Hardy and Colombini (2011) have found that 'RISK is genre sensitive, predominantly negative, and heavily medical in shared meaning across genres'. Zinn (2010) goes further to argue for more cross-disciplinary work to connect sociological research interests and corpus linguistic methods to advance our understanding of the risk phenomenon, in particular its cross-cultural differences and social change. Recent attempts can be witnessed in Koteyko et al.'s (2008) investigation of the exploitation of scientific uncertainty about the origin, spread and treatment of MRSA (i.e., methicillin-resistant *Staphylococcus aureus*) in the