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Governing China's Coal Challenge: Changing Public Policy, Debate and Advocacy

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Abstract

This paper examines the nexus of coal-government-society relations in present-day China using a governmentality approach to explore the interactions between policy change, "crisis" management and social action. It outlines the noticeable shift in government rationalities and communication regarding the coal industry in recent years. It then frames this shift within the broader context of government-society relations focusing on public debate regarding the calamitous nature of China's air pollution and its filtering via the censorship apparatus of the Communist Party-state. Finally, it shows how problems relating to coal extraction and combustion have been taken up at the level of grass-roots protest and philanthropic advocacy. An examination of such activism illustrates the crucial role played by digital media networks in sparking debate on coal-related environmental and health crises, and in pushing an authoritarian government to change national coal and other policies in order to maintain social and political stability.

Introduction

In September 2016, the People's Republic of China (PRC) ratified the 2015 United Nations' Paris Agreement on climate change, with President Xi Jinping pledging that China will pursue a new "green", low carbon path of development. The PRC had already committed a few years earlier to closing down outmoded and inefficient coal mines, as well as backward steel mills which consume large amounts of coking coal. Along with cement, the coal and steel industries are viewed as major contributors to China's hazardous air pollution, carbon dioxide emissions and global human-induced climate change.

Ratification of the Paris Agreement marks the beginning of China's *active* response to climate change. The PRC's media first linked carbon dioxide emissions with human activity

after the publication of the 2007 United Nations' Intergovernmental Panel on Climate Change report (Eberhardt, 2015, p. 33). Baidu Index, a keyword monitoring tool on China's premier Internet portal, Baidu, first showed results for "PM2.5" (particulate matter 2.5), a key indicator of air quality and pollution, in January 2011 (Van den Ven, 2014). The 2013 Action Plan on Air Pollution Prevention and Control advocated targets for reduced coal consumption (State Council, 2013). In 2014, Premier Li Keqiang stated at the televised opening of the annual meeting of the PRC's legislature, the National People's Congress (NPC), that China was "declaring war" on pollution, describing smog as "nature's red-light warning against inefficient and blind development" (Reuters, 2014). In the 2014 and 2015 US–China Joint Presidential Statements on Climate Change, Presidents Barack Obama and Xi Jinping reaffirmed the UN contention that climate change is "one of the greatest threats facing humanity" and both countries have "a critical role to play in addressing it" (The White House, 2015). That responsibility may now fall predominantly on China given signals that the new US administration is seeking to play a less active role in action to mitigate the effects of climate change, with President Donald Trump famously (even if jokingly) calling climate change a "Chinese hoax" (Wong, 2016).

Although China is the world's largest producer and consumer of coal, the PRC's coal consumption fell by more than 3 per cent in 2015 and by a further 1.6 per cent in 2016 (National Energy Administration, 2016). Carbon dioxide emissions also fell in 2015–2016 as the demand for coal declined, "reflecting "an increasing share of renewables, nuclear and natural gas in the power sector, but also a switch from coal to gas in the industrial and buildings sector that was driven in large part by government policies combatting air pollution" (International Energy Agency, 2017). The decline in coal consumption is also an artefact of structural changes in the economy, in particular the rebalancing of the economic growth pattern from investment (which tends to be very energy-intensive) towards consumption (Green and Stern, 2016).

While reduced coal consumption enabled the PRC government to commit to the Paris Agreement, the decline had little to do with policies designed specifically to address climate change. It relates not just to structural change in the Chinese economy (as discussed above), but also to rising societal discord concerning the relationship between the coal industry and pollution, and to government efforts to address domestic air pollution. Public discourse and

action on coal in China have shifted because of these domestic considerations.

The coal industry was flagged as early as 2006 as having a potential "overcapacity" problem, meaning that the capability of the existing proliferation of coal mines to produce coal exceeded the needs of society (State Council, 2006). However, the state-controlled and heavily-censored media used to mainly present coal as something that was "good" – a cheap source of energy, employment and national modernization. "Dirty" coal stories, involving thousands of fatalities each year in mine explosions and collapses, and the routine non-payment of workers' salaries, were kept out of the news (Tian, 2010). Today, coal is again associated with overcapacity, but the designation has acquired harsher connotations in light of President Xi Jinping's signature "supply-side structural reform" policy introduced in late 2015 that highlighted overcapacity as one the economy's five key areas of weakness. Coal is also openly linked to serious occupational health and safety hazards, and presented as a major pollutant and public health concern (National Energy Administration, 2016; Xinhua, 2016).

We highlight the ways in which coal has become an issue and agenda for multiple sectors of government and a range of social actors in China using the conceptual framework of "governmentality". Michel Foucault coined the term to argue that the process of governance in modern nation-states is characterized by a particular way of *thinking* about the aims and operation of government, which is broader than older understandings of government as involving the maintenance of power over territory and people. Foucault (2007, p. 193) defines modern government as about "the conduct of conduct", that is, the question of how to guide the conduct of others, and encourage individuals to modify their own behaviours, to guarantee the optimal relations of populations to territory, resources and means of subsistence (which include variables such as climate, resources, flora and fauna), and other "things" such as customs, lifestyles and ways of thinking and acting. A governmentality approach thus theorizes the relationship between politics and society as dynamic and negotiated, rather than as marked by an inherent opposition between state and civil society (power over society versus resistance to state domination).

Using a governmentality approach to examine the coal-government-society nexus in China focuses analytical attention on the interactions between policy change, public communication and social action in the context of an authoritarian state. We highlight the ways in which coal

has become an issue and agenda for a range of government and social actors focusing on public debates and advocacy about coal-related "crises". Crises, while heterogeneous in nature, typically refer to "abnormal situations" that pose an actual or potential intense threat to public safety and the reputational standing of governments, corporations or organizations (Chan, 2013; Fearn-Banks, 2010). They are moments when governments/organizations stand to gain or lose the approval of domestic and international audiences based on the efficacy of their crisis management and the ways in which information about that response is communicated. In China, where the activities of journalists and broadcast media are subject to government controls, the PRC government has the demonstrated capacity to delay, censor and manipulate public access to information about crises (Xu, 2016, pp. 54–76). However, social media are increasingly playing an alternative "bottom-up" role in exposing crises and generating associated public debate, which can demand an active government response (Xu, 2016; see also Chan, 2013; Luo, 2014).

As shown below, digital media networks have played a crucial role in revealing, disseminating and sparking debate on coal-related environmental and public health crises, and in pushing the PRC government to respond, take action and ultimately change national coal and other policies, in order to maintain political credibility. Understanding this dynamic requires attention to the different logics and possibilities of human action in different cultural contexts. W. Lance Bennett and Alexandra Segerberg (2012) outline two main logics of social action: namely, *collective* and *connective* action, which may occur independently or coalesce in hybrid forms. Collective action such as a large-scale protest is associated with coordinated institutional networks, high levels of organizational resources and the formation of collective political identities, whereas connective action is based on "personalized content sharing across media networks" and often involves diverse "recombinant" populations and more flexible forms of online and offline action (Bennett and Segerberg, 2012, p. 739, pp. 754–759). In China, protests are a common, but government controls ensure that they are not usually driven by organizational coordination and are quickly suppressed by public security forces. Instead, the rise of digital media networks is facilitating public debate and non-conflictual forms of connective action that occasionally also encourage a reframing of government thinking and approaches.

We demonstrate the interactive and sometimes productive nature of coal-government-society relations in present-day China as follows. The paper first reviews the background to recent changes in coal use in China, and examines the noticeable shift in government rationalities and communication regarding the coal industry and related policies over the last two decades. It then frames this shift within the broader context of government-society relations with reference to public debate regarding air pollution and its filtering via the censorship apparatus of the Communist Party-state. Finally, it shows how these debates have been translated and extended on the more granular plane of grass-roots protest and popular advocacy.

Evolving government rationales for China's coal policies

The pre-eminent position of coal in China's economy and in changing government narratives regarding the economy and environment reflects the country's investment-driven, heavily industrialized model of economic development and associated rapid urbanization. According to official statistics, in 2015, coal accounted for 64 per cent of the PRC's total energy consumption, down from 72.4 per cent a decade earlier. In 2016 it fuelled more than 74 per cent of the nation's electricity, down from 84 per cent a decade earlier (ceicdata.com). Between 2000 and 2013, China invested heavily in heavy manufacturing industries such as cement and steel production, which consume large amounts of coal-fired electricity (Green and Stern, 2016, p. 420). But coal-fired power plants and factories are also a major contributor to hazardous levels of air pollution in many Chinese cities, and a chief source of carbon dioxide – the primary greenhouse gas emitted through human activities and a perceived major cause of global warming.

The PRC government's regulatory stance and public communication vis-à-vis the coal industry have shifted since the mid-2000s, displaying new ways of thinking about and acting on coal as an object of government. Specifically, the government's construction of the "problem" of coal has moved from being one in which it sought to allay negative public reaction to the coal sector's abysmal safety record by consolidating a large and fragmented industry, to a broader and more abstract narrative in which coal is perceived chiefly as a threat to public health, via pollution, and to (national and global) environmental sustainability. A corollary of this alteration in governmentalities has been a widening in the remit of coal-related policies. While earlier initiatives were directed mainly at constraining

production in parts of the industry, more recent efforts to "conduct the conduct" of social agents seek to suppress both the production and consumption of coal by incentivizing, and forcing, enterprises in a range of industries to change their behaviour to meet publicized targets.

In the mid-2000s, the coal industry was one of those sectors singled out by the State Council as having a "potential" overcapacity problem in the view of the industry's many small enterprises. Between 2005 and 2007, the PRC government closed around 10,000 small coal mines, typically dangerous, highly polluting and inefficient operations (Reuters, 2007; Wright 2007). These efforts were motivated, in large part, by the abysmal safety record of Chinese coal mines which sustained thousands of worker fatalities every year (Wang, 2006). China recorded less than 1,000 annual deaths from coal mining for the first time in 2014, a figure which fell to fewer than 600 fatalities in 2015 (China Labour Bulletin, 2015; National Energy Administration, 2016). The label of "overcapacity" and associated measures to facilitate industry consolidation and eject smaller enterprises, therefore functioned to address a key issue of public concern and restore public faith in the government's ability to control a sprawling sector and its alarming social consequences.

In recent years, however, the communicated objectives, and types, of government intervention in the sector have shifted markedly, revealing a reconfiguration of policy rationales. Since 2013, the government's policies have been targeted at reducing the weight of coal in China's energy mix, and curbing carbon dioxide emissions. In contrast to the efforts of the mid-2000s, the government has cited a range of economic, environmental and public health concerns in its public communication. The 2013 Action Plan on Air Pollution Prevention and Control advocated targets for reduced coal consumption, including achieving negative growth in key economic regions on the eastern seaboard: Bohai Bay and the Yangtze and Pearl River deltas (State Council, 2013). Environmental concerns stemming from the intensive use of coal in steel mills combined with their poor profitability have also prompted the removal of outdated and inefficient capacity. Hydro-electric generation and wind and solar power are increasingly replacing coal-fired power and producing low/zero-emissions energy (International Energy Agency, 2017).

These measures have contributed to a reversal in China's coal use. Figures released by the

PRC National Bureau of Statistics, indicate that coal-fired power generation has fallen since 2014. Coal consumption fell by more than 3 per cent in 2015. Coal production fell by 2.5 per cent in 2014 and another 3.3 per cent in 2015; and coal imports fell by around 11 per cent in 2014 and 30 per cent in 2015. Official statistics further show that coal production fell by more than 10 per cent in 2016 (ceicdata.com). Coal imports rose by 25 per cent over the same period, according to data from Chinese Customs, partly compensating for the decline in domestic production, although the increase was small relative to the overall fall in domestic coal production.

The green development model proposed in the PRC's Five-Year Plan on National Economic and Social Development for 2016–2020 encourages a further decline in energy-intensive economic activity. This model is supported by revised national laws – the PRC Law on Air Pollution Prevention and Control (2015) and the Environmental Protection Law (2015). The former includes strengthened enforcement and attainment planning measures, while the latter is widely "perceived as the most progressive and stringent law in the history of environmental protection in China" (Zhang and Cao, 2015, p. 433). It details harsher penalties for environmental offences, sets higher standards for enterprises and requires more responsibility and accountability on the part of law-enforcement agencies and local governments. It also contains provisions for tackling pollution, raising public awareness and protecting whistle-blowers.

The PRC's Coal Industry Development Plan for 2016–2020 indicates that coal will remain central to the country's energy mix, but projects that the rate of growth in coal consumption will slow (National Development and Reform Commission and National Energy Administration, 2016). The plan states that industry restructuring and reform will reduce overcapacity and inefficiency, create safer working conditions to reduce the incidence of accidents and pneumoconiosis, and generate cleaner coal supply to curb air and water pollution. It targets an aggressive reduction in coal's share of China's energy consumption to below 58 per cent by 2020, compared with 64 per cent in 2015. While continuing to use international coal resources, domestic coal production is targeted to reach 3.9 billion tonnes in 2020, compared with 3.75 billion tonnes in 2015, with consumption rising from 3.96 billion tonnes to a maximum of 4.1 billion tonnes over the same period. There will be around 6,000 coal mines in the PRC by 2020, which is similar to the number in 2016. However, no

new coal mines will be approved until after 2018 when proposed new projects will have to produce at least 1.2 million tonnes a year and use advanced "clean" technologies to obtain operating approval. In the meantime, small low-quality coal producers will be closed down and large coal operations will be encouraged to form conglomerates, especially those in China's developing north and north-western regions. A representative from the coal division of the National Energy Administration (2016) told reporters that the plan responds to economic and health and safety issues in the coal industry, domestic concerns over air pollution and the PRC's climate change commitments.

China's changing coal policies are thus likely to be a major contributor to declining global emissions and arresting climate change. At the 2015 Paris climate change conference and in the Five-Year Plan for 2016–2020, the PRC government said that the country's carbon emissions would peak by 2030 and committed to embracing a green development model with a stricter environmental protection system (Xinhua, 2015). Domestic economic and policy trends suggest that the PRC is in a position to meet its goal of shifting to a low-carbon, less resource-intensive, services-orientated economy, and thereby meeting its climate agreement pledges.

But there are enormous political challenges associated with downsizing the coal industry and moving to a new model of economic growth. The most obvious is the threat of social and political instability associated with massive lay-offs, especially in regions where the coal industry is a major employer. In 2016, the Ministry of Human Resources announced layoffs of 1.3 million workers at state-owned coal companies (and 500,000 in the steel sector), with around 5 million more workers expected to be laid off in the next few years prices (China Labour Bulletin, 2016). Many local governments have moved slowly in enforcing such cuts as a result of both labour protests and rising coal. The sluggish local implementation of capacity reductions in the coal sector led the central government in February 2016 to instruct all coal mines to restrict operations to 276 work days per year, down from 330 days previously (State Council, 2016). Some state-owned coal companies accessed government funding to diversify their business operations and retrain workers in anticipation of enforced closures. Yet the sharp rise in coal prices that resulted from domestic production cuts following these moves hurt the business of industrial users of coal, with steelmakers petitioning the government to overturn these policies (Biesheuvel, 2016). The restrictions

were relaxed because of rising coal prices in late 2016.

As the preceding examples suggest, ending coal dependence is not just an economic policy or technological issue, it is also a socio-political question. Recent guidelines issued by China's National Energy Administration (2017) acknowledge this point. The guidelines raise the targets for curbing the coal-fired power generation sector by 2020 to control the risk of industry overcapacity and fight air pollution. They also urge relevant authorities to adopt an active media communication strategy on industry restructuring, in order to guide public sentiment and maintain social stability. Using the media to communicate government information and action, while simultaneously curbing the potential for public protest, is consequently an integral yet complicated component of China's changing governmentalities on coal.

Debating the coal-related public health crisis

The evolution of government rationales towards coal has been accompanied by a marked shift in the terms of public debate regarding coal use in China; coal combustion is increasingly presented as the source of an actual or impending public health crisis. In August 2016, domestic and international researchers associated with Tsinghua University released the Special Report 20, Burden of Disease Attributable to Coal-Burning and Other Major Sources of Air Pollution in China (GBD MAPS Working Group, 2016). The report states that "coal combustion is the single largest source of air pollution-related health impact" in the country, contributing to around 366,000 premature deaths in 2013. It also suggests that the health-related burdens of coal extraction and combustion could grow substantially by 2030, if no further government action is taken (an estimated 1.3 million deaths annually).

The growth of government-society interactions in relation to coal can be traced to public debates about air pollution that emerged early in the current decade. While Baidu Index first recorded results for the term "PM2.5" in January 2011 (Van den Ven, 2014), the term had received more than 13.3 million hits on Baidu.com by January 2018.

The surge in public debate on PM2.5 in China is associated with the actions of the US Embassy in Beijing, which prompted an upsurge in connective action on digital media

networks highlighting community concerns about the PRC government's inaction on, and apparent passive acceptance of, air pollution. In 2008, the US Embassy in Beijing installed an air-quality monitor on the embassy roof, and began releasing hourly data on a dedicated Twitter account called @BeijingAir in July that year (Roberts, 2015). The run-up to the August 2008 Beijing Olympics was accompanied by international concerns about China's air quality and the event was followed by rising domestic concerns about the rapid degradation of air quality. In late 2010, the embassy reported that the PM2.5 index in Beijing exceeded 500, which signifies extremely poor air quality, and tweeted "crazy bad" (Roberts, 2015).

Chinese netizens with the finances or institutional position required to purchase a VPN and circumvent the PRC's infamous Internet firewall started to follow @BeijingAir, and translated and reposted data on Sina Weibo. Sina Weibo is a popular Chinese-language microblogging site that combines aspects of Facebook and Twitter, which are blocked in China (Xu, 2016). Public figures with huge numbers of followers, such as real estate tycoon Pan Shiyi (more than 16 million followers), investor Xue Manzi (nearly 11 million followers) and children's author Zheng Yuanjie (more than 6 million followers), not only reposted data from @BeijingAir, but also published online essays and polls between 2011–2013 calling for immediate government action on air pollution (Van de Ven, 2014). Such public figures are known as "Big Vs" because they have a substantial following and also registered and *verified* accounts on Sina Weibo.

In November 2011, Big Vs and thousands of everyday microbloggers alike started to question the discrepancy between the US Embassy data and the Beijing Environment Bureau's air-quality index (PM2.5 de zhongguo zhilu, n.d.). China's netizens began to ask: why did the Beijing municipal government monitors show only "slight pollution", when the US Embassy data indicated that the city was experiencing episodic periods of noxious smog at levels 20–50 times higher than those recommended by the World Health Organization? The critical nature of China's air pollution, or "airpocalypse" as foreign correspondents dubbed the situation, quickly became a "hot-button" issue engaging the energies of both government officials and the general public.

While initially questioning the legality and accuracy of the US Embassy's actions and data, the PRC government subsequently established a national air-quality monitoring system, and

committed through new national legislation and international agreements to arresting domestic air pollution, carbon emissions and global climate change (Ambient air quality standards, 2012). The government's prompt response to the "crisis" quickly restored a degree of public confidence in its ability to control domestic air pollution and contribute to action on climate change. In August 2012, the China Center for Climate Change Communication (2012) – a collaboration between the Research Center for Journalism and Social Development at Renmin University in Beijing and Oxfam Hong Kong – conducted a national telephone survey about climate change communication. The survey results indicated that 93 per cent of the respondents knew at least something about climate change, 78 per cent worried about it and 77 per cent believed people in China are or will be harmed by climate change. Most respondents (94 per cent) said that they had obtained information about climate change from television; 89 per cent trusted scientific institutions as sources of information about climate change; 86 per cent trusted the government; 82 per cent trusted the news media; and while only 38 per cent trusted corporations, only 41 per cent trusted NGOs.

This apparent trust in authoritarian government, and lack of confidence in NGOs, is a function of Party-state controls over the country's media and fledgling philanthropic sector. Media content analyses of PRC television and news coverage of air pollution between 2012 and 2013 reveal widespread but contained coverage of the issue (Li, 2014; Zheng and Zhang, 2013). Unlike the critical and calamitous tone of western media reports, China's media typically adopted a neutral tone at that time, although Beijing authorities issued an inaugural smog "red alert" in December 2015 and a five-day alert in December 2016 ordering heavy industry to slow production, closing schools and advising residents to remain indoors. Media content analyses reveal that China's media chiefly focused on government actions to monitor PM2.5, control coal consumption, and reduce carbon dioxide emissions, and provided information about PM2.5 and how citizens could protect their health on "bad smog days", for example, by wearing face masks and restricting outdoor activities and exercise (Li, 2014; Zheng and Zhang, 2013). This is consistent with Chinese media communication on climate change, which primarily focuses on PRC government policies and diplomacy, and the impacts of climate change outside of China (Eberhardt, 2015).

The constraints on domestic public debate and advocacy on coal, air pollution and climate change are illustrated by the public controversy surrounding (and subsequent censorship of)

journalist Chai Jing's documentary film, *Under the Dome*, an exposé of the causes and consequences of China's air pollution. In March 2015, Premier Li Keqiang stated at the opening of the annual NPC that: "Environment pollution is a blight on people's quality of life and a trouble that weighs on their hearts …We must fight it with all our might" (Tiezzi, 2015b). His comments came a few days after the release of Chai's self-financed documentary, which was viewed over 200 million times on social media before it was pulled. The PRC's Minster of Environment Protection praised the film as "worthy of admiration" and compared it with Rachel Carson's book of 1962, *Silent Spring*, which is said to have given impetus to the environmental movement in the US (Wildau, 2015). The *People's Daily* – the official voice of the Chinese Communist Party – also reposted the documentary and published an interview with Chai (Tiezzi, 2015a).

Despite government support, only a few days after its release, the PRC's Publicity Department ordered China's media to stop publishing articles about the documentary and removed it from video-streaming websites. A consideration of the governmentality underpinning censorship, and the timing of the removal of Chai Jing's film, helps explain the apparent paradox of a government ban on a film that already had government endorsement. A large-scale study of Chinese media has shown that censorship does not necessarily prevent criticism of the government or Communist Party (King, Pan, and Roberts, 2013). Extensive censorship notwithstanding, Chinese people can and do use social media to write "scathing criticisms" of their government, its leaders and policies, and increasingly the PRC government has responded to online public concerns through new and old media as a major means of doing "crisis" communication (Xu, 2016; Yu, 2011). Censorship works instead to "reduce the probability of collective action by clipping social ties whenever any collective movements are in evidence or expected" (King, Pan, and Roberts, 2013, 326). Contrary to claims that the documentary was pulled simply because it was too critical of the government, it seems likely that Chai Jing's documentary was withdrawn to halt potential public protest on coal and air pollution surrounding the 2015 meeting of the NPC.

The Chai Jing incident thus underscores a key influence of government-society interactions over coal in recent years – namely, the threat of public protest. Protests are a common form of social action in China, but contentious protests involving institutional coordination and large groups of people are usually quickly suppressed. Even so, there has been an upsurge in social

activism relating to the harmful health effects of coal-linked pollution in the current decade. The next section therefore examines how collective and connective actions relating to coal have developed in the Chinese context.

Grass-roots protest and popular advocacy

Overt conflict has become a feature of the coal-government-society nexus in China. In 2016, thousands of people in Heilongjiang Province clashed with police as they protested unpaid wages and wage cuts at an unprofitable state-owned coal group (Hornby, 2016). One worker noted that they had been paid while the NPC was in session, implying that salaries had been paid during that period so that provincial leaders would not attract any negative public attention at that time (Hornby, 2016). Although labour-related protests are likely to continue in the short-term along with industry restructuring, such protests are associated with disaffected workers in particular enterprises rather than collective action organized through trade unions.

Community protest and advocacy focused on the harm of coal extraction and combustion is also evident. In 2011, police fired tear gas at thousands of demonstrators encircling a government building in Haimen, Guangdong Province, protesting plans to build a new coal-fired power plant. Protestors claimed that an existing plant had damaged local fisheries, and increased air pollution levels and cancer rates (Reuters, 2011). In 2014, around 200 people in a rural town in the Xinjiang Uyghur Autonomous Region blocked the road to a new coal-to-natural gas conversion plant, protesting against smog (Bloomberg News, 2014). People have also protested against the environmental and health consequences of coal mining in the Yushu Tibetan Autonomous Prefecture (Radio Free Asia, 2014), and in Inner Mongolia which has 26 percent of China's coal reserves but only 1.6 percent of its water (Svensson, 2013). In 2016, hundreds of people in Heyuan City, Guangdong Province protested against the expansion of a coal-fired power plant. They collected over 10,000 signatures to petition the local government, and held up banners indicating that the plant would mean an end to "blue sky days" and damage public health (Martina and Niu, 2015).

A different and perhaps more effective long-term form of public advocacy on coal-related issues in China is "embedded activism" conducted through philanthropic organizations, such

as Love Save Pneumoconiosis (www.daaiqingchen.org/). As Peter Ho and Richard Edmonds (2007) explain, embedded activism refers in the context of the one-party ruling system to forms of social action that are not explicitly politically contentious, will not result in collective social movements or protests, and are framed within an acceptable remit of government institutions and concerns, even though they may occasionally challenge government policy and approaches. This "not-contentious" style of state-society interaction is typically adopted by China-based not-for-profits to ensure their operational survival. They operate strategically in spaces are neither entirely "of" nor "outside" of government, and hence are not explicable with reference to western-liberal conceptions of collective action as characterized by a division between "the state" and "civil society organizations" or the non-governmental arena.

The example of Love Save Pneumoconiosis underscores the more subtle, non-conflictual ways in which social actors can encourage government action to mitigate the harmful effects of coal on society, by using a mixture of online media and offline activities. Launched in June 2011 by Wang Keqin, a prominent academic and investigative journalist, Love Save Pneumoconiosis is a public fundraising foundation that promotes pneumoconiosis prevention and provides medical and other assistance to people suffering from pneumoconiosis (black lung disease). The foundation has around 940,000 followers on its official Sina Weibo, and Wang Keqin has nearly 730,000 followers. Pneumoconiosis is an incurable but preventable occupational lung disease caused by inhaling coal dust and other carbon materials (American Lung Association, 2015). It can be prevented by not inhaling coal dust: that is, by wearing protective masks and using specific procedures to wash skin and clothing contaminated by coal dust. Frequent unprotected exposure to coal dust gradually inflames the walls of the air sacs in the lung, resulting in scarring of the tissue between the air sacs and stiffening of the lung, with complications ranging from breathing difficulties and a chronic cough to lung cancer, pulmonary tuberculosis, and respiratory and heart failure.

The foundation's website describes black lung as a public health crisis and "the most critical problem in China in this century", because it has a current mortality rate of more than 22 per cent and could affect many of the country's estimated 6 million coal workers, yet there is limited worker's compensation and medical support (www.daaiqingchen.org/). While the suggestion that most coal workers are affected is probably exaggerated, the number is large

even by government accounts. In 2015, the China Coal Miner Pneumoconiosis Treatment Foundation, a government-organized charity founded in 2003, reported that there were 720,000 documented cases of black lung disease, with more than 60 per cent in coal industry areas (Renmin Ribao, 2015; www.cfbjjh.org.cn). Coal workers are often unskilled rural-to-urban migrants employed for their low labour costs; those affected by pneumoconiosis usually cannot afford treatment (Ho, 2014). Poor enforcement of the Law of the People's Republic of China on Prevention and Control of Occupational Diseases (2001) has meant that many affected coal workers have been unable to claim compensation from their employers as stipulated in law, because of legal costs and difficulty demonstrating that they contracted the disease during their period of employment. Love Save Pneumoconiosis consequently calls on concerned citizens to donate money to help save rural-migrant coal and construction industry workers, described as people whose "blood and sweat went into the high buildings and the booming economy" enjoyed by urban Chinese (www.daaiqingchen.org/).

Love Save Pneumoconiosis has had policy impact and raised public awareness of the disease, both by exploiting interest on social media in celebrity news and working with local government authorities. Wang Keqin's first post about pneumoconiosis on Sina Weibo was on 20 December 2010; this preceded the establishment of the foundation, which was initially launched under the auspices of the China Social Assistance Foundation, a government-organized charity, and later became an independent fundraising charity. His work on pneumoconiosis was taken up by the government-controlled media entities China National Radio and China Central Television, and the launch of the foundation attracted the support of some Big Vs. In June 2011, actress Yao Chen, who has more than 40 million followers on Sina Weibo, reposted a link to the organization's promotional video (Online philanthropy in China, 2013). Actor Chen Kun, who has more than 80.5 million followers on Sina Weibo, donated CNY 350,000. In 2015, actress Yuan Li, who has 12 million followers, sparked a massive short-term increase in public donations (CNY 4.6 million in three months) by visiting affected miners (Yu, 2015).

As of late 2017, the charity had raised nearly CNY 52 million from public donations, and helped more than 2,000 people with black lung disease and supported the education of around 4,000 children of people affected by pneumoconiosis (Daaiqingchen.org, 2017). In 2012, the Hunan provincial health department accepted a proposal from the foundation to include

pneumoconiosis into the New Rural Cooperative Medical System in pilot counties (Online philanthropy in China, 2013). Similarly, the civil affairs bureau in Sichuan Ebian Yi Autonomous County set up a dedicated account for black lung patients with the support of the foundation. The State Council has also intensified work on preventing occupational diseases as part of its sustainable development planning on resource-dependent cities for 2013–2020, with the National Health and Family Planning Commission establishing a Medical Expert Committee to improve Pneumoconiosis diagnosis and treatment in December 2017 (Daaiqingchen.org, 2017).

Embedded activism on environmental protection and health issues is likely to expand following the introduction of the PRC's first Charity Law in 2016 and the Law on the Management of Foreign Non-Governmental Organizations' Activities within Mainland China in 2017 (National People's Congress, 2016a, 2016b). The Charity Law recommends providing tax incentives for three types of domestic charitable organizations that meet annual reporting requirements: namely, (1) foundations; (2) social service organizations; and (3) social or membership associations. Western observers have complained vociferously about the law on international NGOs, claiming that it sounds the death knell for the country's nascent philanthropic sector because it requires international NGOs to register with local public security bureaus, as is also the case for foreign residents and businesses in China. The explicit rationale of both laws is to create a legally registered, accountable and professional not-for-profit sector that will support the PRC government's public welfare goals, for example, by eliminating poverty and improving the environment (and not engaging in or funding for-profit activities, political and illegal religious activities, and activities that endanger national security).

The central government's endorsement of tax incentives for registered domestic charities, together with a new legal framework that places limits on the activities of some international NGOs, suggests that the number of *domestic* not-for-profits will expand rapidly in China, and especially in areas marked as important by government. An influx of new actors and organizations into the field of environmental protection and health would be likely to foster heightened public and government awareness of the social consequences of coal extraction and combustion, albeit communicated within an acceptable remit of government institutions and concerns. This could nevertheless reinforce the current direction of environmental, air

quality and coal policies in China. Such legal innovations highlight a feature of contemporary governmentalities in China – namely, the indirect encouragement of non-governmental actors to pursue objectives that have high-level government endorsement, subject to a mesh of constraints on non-sanctioned or conflictual forms of conduct.

Concluding remarks

Advancing international action on climate change, which requires the involvement of countries with developing economies to be successful, demands a consideration of how coal reliance is being communicated as a "problem" in relation to national governments, industries and environments, and of the environments surrounding human action in different cultural contexts. This paper reveals a significant change in the way that coal is being communicated as an object of government policy and public discourse in the PRC. Using a governmentality approach to explore the interactions between policy change, crisis management and social action, it identifies the evolving rationalities and strategies of the PRC government vis-à-vis the challenges of changing coal policies and maintaining social and political stability. It also shows how a range of social actors have managed to work productively within the constraints of an authoritarian system to alter government thinking on the problems associated with coal extraction and consumption.

Government authorities in China no longer present coal in neutral or positive terms as something that is good for national development. There has been a transition away from communication that focuses on localized problems regarding industry efficiency, pollution and mine safety towards communication that emphasizes unsustainable overcapacity, national air pollution and global climate change, and endorses national government action to advert a coal-related environmental and public health crisis. This shift in government rationales reflects (and has in turn reinforced) a sharp increase in public awareness of the risks associated with coal extraction and combustion, facilitated through the diverse forms of organization and action that are enabled by digital media networks. Societal consciousness of the downsides of coal reliance is likely to increase given the PRC's ratification of the Paris Agreement on climate change, and its commitment to close more coal mines and steel mills and to pursue a green path of economic development.

The PRC government's promotion of capacity reductions and cleaner technologies in the coal sector, as detailed in the Coal Industry Development Plan (2016–2020), dovetail neatly with its broader climate change commitments (National Development and Reform Commission and National Energy Administration, 2016). But these efforts appear to have followed rather than pre-empted an upsurge in public awareness of the damaging effects of air pollution on quality-of-life. This suggests that the government's policy response to coal-related climate change was reactive until recently.

A hallmark of the shift occurring in contemporary governmentalities in the PRC is the noticeable influence of social actors in guiding current governmental initiatives on coal through actions enabled by digital media networks, via the reality and perceived threat of public protest, and through more subtle awareness-raising campaigns associated with embedded philanthropic action. Social media activity surrounding air pollution, although constrained by censorship, has influenced government behaviour by prompting efforts to engender public faith in the central government's ability to protect the public health by improving the quality of the environment (PM2.5 de zhongguo zhilu, n.d.). Philanthropic foundations, although constrained by government controls on social organizations, have exploited public interest in celebrity news and social media to attract donations for sufferers of black lung disease, described as "the most critical problem in China this century", while also working with local governments to provide health care (www.daaiqingchen.org/).

Connective action facilitated through digital media networks is becoming a popular route for citizen advocacy in the PRC, with different levels of government now often proactively responding to online public concerns through new and old media as a means of innovating "crisis" management and guiding public sentiment (Chan, 2013; Xu, 2016; Yu, 2011). Provided they are conducted within an acceptable remit of government institutions and concerns, some grass-roots organizations may also now receive tacit government support via funding or tax incentives. The interactions between state and other actors in dealing with coal-related "crises" thus highlight a new pattern of doing health-related environmental communication and public policy making in the PRC. Future research could further map the evolving, mutating and ultimately diverse networks of institutions, actors, practices and tactics involved in governing China's "coal challenge", and measure the related success or otherwise of the PRC government's domestic and international diplomacy.

The fact that new forms of social action are emerging spontaneously to address the deleterious human consequences of coal extraction, and societal resources are increasingly being mobilized to campaign for a "greener" future for China, presents a powerful opportunity for the PRC government. A clear policy implication of these trends is that the government (and Party) should seize upon these initiatives and support them, in order to reinforce its own agenda to achieve a more sustainable environmental future for China and to counteract the threat of a rising fiscal healthcare burden posed by pollution and preventable occupational disease. This could be achieved by increasing direct financial support to domestic not-for-profits involved in raising awareness about pneumoconiosis and the harmful effects of air pollution, and giving explicit central government support to these activities, combined with redoubled efforts to shut down existing coal mines and block the opening of new coal extraction ventures.

Yet policies targeting coal extraction also present a key challenge for policymakers and environmental communication in China because of job losses and potential industrial unrest. There is already evidence that the resolve of some local authorities to close coal mines and steel mills has been weakened by these pressures, and that the central government is being petitioned by aggrieved voices in the corporate sector (Biesheuvel, 2016; China Labour Bulletin, 2016). More broadly, efforts to maintain stable growth in the economy and continued urbanization may make it hard for China to move away from energy-intensive growth. In the longer term, the alacrity (or otherwise) shown by the PRC government in tackling the coal challenge will have far-reaching consequences for the welfare of the Chinese people and its own success in ameliorating the effects of human-induced climate change.

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