



## The Politics of Waste Incineration in Beijing: The Limits of a Top-Down Approach?

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**ABSTRACT** *The siting of waste incinerators is often a highly contentious issue. Although most studies have focused on Western countries, municipal solid waste management has become an extremely pressing issue in China. Incineration is being strongly promoted by government officials, yet this has resulted in strong societal opposition. Through documentary analysis and in-depth stakeholder interviews, this article analyses three anti-incineration campaigns in Beijing, focusing on outcomes and campaigner strategies. Anti-incineration campaigns have partly undermined the government's top-down, non-consultative approach to waste management. In developing an 'expert strategy', campaigners have exploited government weakness whilst depoliticizing the issue. Yet rather than lead to a more open and consultative incineration policy, it is more likely that officials will circumvent unrest through increasing opacity and by choosing sites in locations where opposition is less likely to emerge.*

**KEY WORDS:** Public participation, campaigns, environmental politics, China

### Introduction

Increasing quantities of municipal solid waste (MSW) are presenting a growing challenge for urban governments across the world. Far from being merely a technical process, MSW management is often highly contentious. The issue of waste incineration has been particularly controversial due to public concerns surrounding public health and the environment (Rootes, 2009). Opponents claim that waste incineration emits dangerous, polluting, and highly carcinogenic substances including dioxins, mercury, and furans, and undermines more sustainable waste treatment methods such as recycling and waste reduction. Conversely, proponents point to benefits such as reduced pressure on landfill sites and energy generation as a by-product of waste-to-energy (WTE) incinerators, whilst insisting that emissions can be controlled within strict standards. Issues surrounding waste

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incineration have caused numerous collisions of interest between different levels of government, corporations, environmental non-governmental organizations (NGOs), and communities opposing decisions to site MSW facilities in their 'backyards'. Such conflicts sometimes facilitate constructive discussion and debate concerning waste management solutions (McAvoy, 1999; Nissim *et al.*, 2005). At the same time, prolonged conflict can undermine waste treatment, resulting in environmental degradation and health risks (Davies, 2008).

Scholarly understandings of MSW management controversies are almost exclusively confined to cases from advanced industrialized democracies (see, for example, Davies, 2008; Rootes & Leonard, 2010; Walsh *et al.*, 1997). And yet MSW management is emerging as a particularly pressing and contentious issue in emerging economies. No where we face a greater challenge in this respect than China, which at the start of the millennium overtook the USA to become the world's largest generator of MSW (World Bank, 2005). As of 2009, China was producing approximately 148 million tonnes of MSW annually (Asian Development Bank, 2009), a figure that was forecast to more than treble to 480 million tonnes per annum by 2030 (World Bank, 2005). The twin processes of unprecedented rapid urbanization and changing consumption patterns are the main drivers behind this exponential growth. By 2008 China's urban population stood at over 600 million compared with 190 million in 1980 (*China Daily*, 2009). It is estimated that by 2050 Chinese urban dwellers, who on average generate between two and three times more waste than their rural counterparts, will represent 75% of the population (Wu *et al.*, 2007). This is placing intense strain on the country's underdeveloped waste treatment infrastructure. According to the Asian Development Bank (2009), almost half of China's MSW is untreated and disposed of in unsuitable landfills on the outskirts of cities. The OECD (2007, p. 131) has claimed that aerial surveys show many urban areas 'are almost surrounded by dumps'. On 1 April 2009, the state-owned *People's Daily* reported that one-third of Chinese cities were surrounded by waste, covering a total area of 500 million square metres (*People's Daily*, 2009).

In common with many advanced industrialized nations in the early 1970s, the Chinese central government has embraced waste incineration in response to a considerable MSW challenge. The central government aims to increase the amount of waste disposed of in WTE incinerators from 1% in 2002 to 30% by 2030, necessitating a massive expansion in China's waste incineration capacity (Asian Development Bank, 2009). At the end of 2004, China only had 54 municipal waste incinerators (OECD, 2007). By 2010 this had almost doubled to 103 incinerators, and it is expected that China will have over 300 incinerators with a combined daily capacity of 300,000 tonnes by the end of the current 12th Five-Year Plan (FYP) (2011–2015) (*New Century*, 2012).

This rapid expansion in waste incineration capacity has incited opposition campaigns from local communities. According to *The Beijing News*, between 2008 and 2009 'anti-incinerator-construction incidents' occurred in 30 Chinese cities (*The Beijing News*, 2010c). This has potentially serious implications both for China's waste treatment strategy and the Chinese Communist Party's (CCP) core goal of maintaining social stability. Waste incineration opposition has been particularly prominent in Beijing, where the Municipal Government announced plans to construct nine incinerators with a combined daily capacity of 8200 ton by 2015 (Yang, 2010). Since 2006, residents in suburbs of Liulitun, Gaoantun, and Asuwei, located in the Haidian, Chaoyang, and Changping

districts, respectively, have waged high-profile campaigns against decisions to site incinerators in their neighbourhoods. Although these three areas fall under the same municipal government jurisdiction, campaign outcomes and strategies varied widely. This article has two main aims. First, it examines how citizens in these three cases mobilized against incinerators, and analyses the factors contributing to campaign outcomes. Second, it considers the government's response to anti-incineration campaigns and the broader implications for waste governance in Beijing and China more generally. The next section of this article briefly examines how anti-siting movements emerged and developed in a Western context, before providing an overview of Beijing's 'waste crisis'. It then examines the three anti-incineration campaigns in detail and discusses government responses before finally drawing some conclusions.

### **Anti-Siting Movements in a Comparative Perspective**

During the late 1960s and early 1970s, citizen's concern regarding linkages between industrialism and public health in advanced industrialized nations increased (Rootes, 2009). This concern was partly manifested in growing localized opposition to the siting of 'locally unwanted land uses' (LULUs), including waste incinerators. Campaigners have used an array of strategies to oppose LULU sitings, including lobbying, litigation, and extra-institutional tactics (Rootes & Leonard, 2010; Walsh *et al.*, 1997).

When anti-siting campaigns first emerged, project proponents frequently labelled campaigners as troublesome NIMBY ('not-in-my-backyard') actors who selfishly put their own narrow concerns ahead of the public good. NIMBY actors were portrayed as overly emotional, lacking in technical expertise, and motivated by irrational concerns (McAvoy, 1998). Partly as a result, government officials were (and still are) largely unwilling to incorporate public opinion into siting decisions (McAvoy, 1998). Although attempts have been made to solicit the opinions of local communities, including via public hearings and, more recently, through deliberative processes such as citizens' advisory committees (Petts, 2001), these efforts have often resulted in unsatisfactory levels of public participation. In some cases, public hearings have been viewed as tools of public appeasement with minimal impact on decisions (Joppke, 1993). Moreover, low levels of transparency, including the apparent deliberate under-publicizing of public hearings, have reinforced public scepticism (Cole & Foster, 2001; Shevory, 2007; Walsh *et al.*, 1997). This has sometimes resulted in elevated levels of anger and mistrust directed against project proponents (Innes & Booher, 2004).

Growing opposition to LULUs such as waste facilities meant that political factors became more important in siting decisions. In some cases, governments and corporations strategically located waste facilities in or close to communities that were, based on their demographic characteristics, predicted to offer least resistance. When a 1984 report identifying characteristics of communities supposedly least hostile to waste incinerator siting that had been commissioned by the California Waste Management Board found its way into activists' hands, this strategy was laid bare for all to see (Cole & Foster, 2001; Walsh *et al.*, 1997). Evidence that a high number of toxic dumps were sited in ethnic minority communities in the USA fuelled the environmental justice movement (Cole & Foster, 2001). Atlas (2001a, 2001b) found that by the 1990s landfill expansion projects were less likely to proceed in areas with high concentrations of ethnic minorities, and

that minority and low-income communities did not bear a disproportionate risk from hazardous waste facilities. According to Rootes and Leonard (2009), this was testament to the environmental justice movement's success.

Indeed, the networking of disparate campaigns into broader social movements is a striking feature of anti-siting campaigns in the West. Anti-siting campaigns first emerged in isolation from each other and from a broader environmental agenda, with early victories against LULUs reflecting the strength of local opposition groups rather than that of a wider movement (Gottlieb, 1993). In the USA, a myriad of grassroots organizations established to oppose unwanted waste facilities formed links with the wider environmental justice movement (Fletcher, 2003; Rootes & Leonard, 2009). As well as providing local activists with information and support and making it harder for facility proponents to discredit opponents, this has been credited with rejuvenating the US environmental movement (Rootes & Leonard, 2009; Walsh *et al.*, 1997). Although the environmental justice discourse has been far less prominent in Europe, campaigners have also, to varying degrees, networked into movements. This has sometimes been achieved with the support of established national-level environmental NGOs, such as in England (Rootes, 2009). The networking of anti-siting campaigns has been seen as a key factor in diverting attention away from parochial NIMBY sentiment towards a wider concern about the relationship between industrialism, health, and environment at a regional, national, and global level (Freudenberg & Steinsapir, 1992; Hess, 2007; Rootes & Leonard, 2009; Shemtov, 1999). In the early 1970s, governments across the USA viewed waste incineration as an effective policy solution, yet by the mid-1980s public opposition had made it extremely difficult to build an incinerator (Walsh *et al.*, 1997). Rootes and Leonard (2009) argue that anti-incineration campaigns were an important factor in pushing the American waste industry towards a more sustainable direction. Even when unsuccessful, campaigners have helped to promote public participation and information disclosure (Gottlieb, 1993; Rootes & Leonard, 2009).

In China, anti-siting campaigns have emerged as part of a wider upsurge in localized, single-issue contention since the reform and opening-up period began in 1978 (Perry & Selden, 2003). Influenced by the CCP's official commitment to rule of law, increasingly rights-conscious citizens tend to utilize 'rights upholding' (*weiquan*) language, whereby they call on unruly officials to implement policies and govern according to laws and regulations. Since 2003, the central government has provided formal channels for public consultation in laws and measures pertaining to environmental impact assessment (EIA) and administrative licensing, and has also passed measures requiring greater environmental information disclosure (Johnson, 2010). Although this legislation has numerous shortcomings and has only been weakly enforced, ordinary citizens are increasingly aware of their 'right' to be consulted over the siting of waste incinerators and other large facilities (Johnson, 2010).

### **Incineration Policy and Public Opposition in Beijing**

In the early 1980s, over 4700 piles of waste that exceeded 50 square metres were identified between Beijing's third and fourth ring roads. In response, the Beijing Municipal Government invested 2.3 billion Yuan in constructing 23 waste facilities. Then, landfill was the preferred solution to Beijing's waste problem. However, a sharp increase in the generation of waste coupled with the rapid

filling up of landfills has created a significant challenge for municipal authorities. On 3 September 2009, head of the Beijing Municipal Commission of City Administration and Environment (BMCCAE), Chen Yong, publicly stated that the city was facing a 'waste crisis'. Current waste treatment capacity was just 10,300 ton per day, far below the 18,400 ton of waste that were being generated daily. The Beijing Municipal Government responded by announcing plans to massively expand the city's daily waste treatment capacity to 17,000 and 30,000 ton by 2012 and 2030, respectively (Chen, 2010).

In order to meet its waste treatment target, the Beijing Municipal Government aims to significantly increase the proportion of incinerated waste. In 2007, it published the 'Beijing Municipality Solid Waste Treatment Plan for the 11th Five-Year Plan Period'. Pursuant to this, the Municipal Development and Reform Commission (DRC) published the 'Implementing Plan for Beijing Municipality Domestic Waste Treatment Facility Construction in the 11th Five-Year Plan Period' (hereinafter referred to as the 'DRC Domestic Waste Plan') (Beijing DRC, 2007). Incineration was central to this document, with pollution concerns, land scarcity, and cost cited as reasons against expanding landfill (Beijing DRC, 2007). At the start of the Plan period in 2006, government statistics stated that 90% of Beijing's treated waste went to landfill, with 8% and 2% being composted and incinerated, respectively.<sup>1</sup> According to the Beijing DRC, by the end of the Plan period in 2010, 40% of waste in the city area would be incinerated, with landfill and composting both accounting for 30% of waste treatment (Beijing DRC, 2007).<sup>2</sup> This was labelled the '4:3:3' objective with reference to the proposed ratio between incineration, landfill, and composting.<sup>3</sup> In comparison, 5.4% of European Union (EU) waste and 12.7% of the US waste were incinerated in 2008 (Eurostat, 2010; *The New York Times*, 2008); in Japan, almost 80% of waste was being incinerated as of 2005 (*The New York Times*, 2005). To meet the 4:3:3 objective, four incinerators were to be constructed and/or go into operation during the Plan period at Liulitun, Gaoantun, Asuwei, and Nangong (Beijing DRC, 2007). This section examines the first three cases. Nangong was not chosen, partly due to space constraints, and also because societal opposition was weak.

#### *Liulitun: 'Seeking Truth from Facts'*

In 1995, approval was given to construct a landfill facility at Liulitun, located in Northwest Beijing's Haidian district. Yet from the beginning, there was disagreement within government regarding the suitability of the site, which was chosen due to the existence of a pit created by a brick-firing company. The Beijing Municipal Environmental Protection Bureau (EPB)'s EIA report stated that, 'from an environmental protection viewpoint, it is unsuitable to construct a waste landfill at this location' (Feng, 2009, p. 31). Although it subsequently agreed to the landfill, the EPB suggested that no housing be built within 500 m of the site, and that local residents be relocated. These suggestions were ignored. Moreover, the surrounding area continued to be developed for residential purposes.

After the first phase of the landfill project was completed in 1999, local residents started complaining about a stench from the site. Subsequently, concerns were voiced that the landfill had contaminated groundwater, causing health problems among local residents, including increasing cases of cancer (Liu, 2007). In late 2006, residents were, therefore, horrified to learn of plans to build an incinerator capable of burning 1200 ton of waste per day adjacent to the landfill, which was

due to be decommissioned in 2012.<sup>4</sup> The Municipal EPB had approved the incinerator project's EIA in November 2005, with construction scheduled to start in March 2007 to ensure completion before the 2008 Beijing Olympic Games.

Residents wasted little time in mobilizing against the incinerator. They utilized *xinfang* and *shangfang* ('letters and visits') channels, which involve petitioning government departments in person, through letters and emails, and via phone calls. Campaigners focused on what they claimed was an arbitrary, or 'unscientific' decision-making process that had overlooked the unsuitability of the Liulitun site, and which contravened regulations governing where incinerators can be cited.<sup>5</sup> Local residents formed a 'study group' composed of several retirees to conduct research into local geographic conditions, as well as policy and technical issues related to incineration. Campaigners also visited potentially sympathetic experts to obtain technical and legal information and were encouraged by support received from several of them (Feng, 2010). According to the 2006 State Environmental Protection Administration (SEPA) and National Development and Reform Commission (NDRC) 'Notice Regarding Strengthening of EIA Management Work for Projects Involving Electricity Generation from Biomass' (SEPA & NDRC, 2006), incinerators 'ordinarily' should not be built in the following locations:

- Built-up or planned urban areas in large- and medium-sized cities.
- Upwind from towns and cities, and/or densely populated areas.
- Environmentally sensitive areas where an incinerator might result in failure to meet environmental targets and standards.

Local residents argued that Liulitun had become a densely populated area, with over 250,000 people living within 5 km of the site. They claimed that Liulitun was an environmentally sensitive area, with the Miyun-to-Beijing water channel that supplies Beijing's drinking water only 1 km from the proposed incinerator. Furthermore, the local area was environmentally sensitive due to pollution from the landfill and the fact that many historical sites and universities were situated nearby. In January 2007, campaigners obtained an abridged version of the incinerator project's EIA report from the Beijing EPB website, and immediately found mistakes and inconsistencies.<sup>6</sup> For example, residents questioned the report's claims that dioxins can be measured in real-time, and argued that the prevailing wind in Beijing is north-westerly (which would place Liulitun upwind from downtown Beijing) and not, as the EIA claimed, north-easterly. Residents also complained that they had not been consulted about the project.

After receiving advice from environmental lawyer Xia Jun, in February 2007 campaigners applied to SEPA for an administrative review into the Beijing EPB's 'illegal' decision to approve the project's EIA. They asked SEPA to order the municipal EPB to revoke the original EIA, conduct a new EIA incorporating public consultation, and to temporarily suspend the project (SEPA, 2007b).

According to the Administrative Review Law, government departments should respond within 90 days. Having received no response, and frustrated with the lack of progress, over 1000 residents converged on SEPA's headquarters in Beijing demanding action from the government on 5 June 2007 (World Environment Day).<sup>7</sup> This proved to be an important turning point in the case.<sup>8</sup> SEPA Vice-Minister Pan Yue was given responsibility for overseeing the Liulitun case (Interview with environmental lawyer, Beijing, 29 November 2010). Campaigners viewed this as a fortunate development (Interview with Liulitun campaigners,

Beijing, 6 June 2011). Between 2005 and 2007, Pan had launched three high-profile 'EIA storm' campaigns designed to improve implementation of the EIA Law. Also around this time, Pan was particularly determined to promote greater public participation and transparency in the EIA process. According to a lawyer with close links to SEPA, Pan wanted to use the Liulitun case to further his agenda of improving public participation in EIA (Interview with environmental lawyer, Beijing, 29 November 2010). In a statement issued two days after the protest, Pan stated that, 'we hope that all levels of government will provide a platform to enable the public to enjoy sufficient right to know, right to supervise, and right to participate in large-scale environmental affairs' (SEPA, 2007a). The same statement suggested that the project be suspended to allow further discussion and soliciting of public opinion (SEPA, 2007a). The administrative review decision, issued on 12 June, echoed this sentiment. It criticized local officials for ignoring the EPB's 1995 advice and allowing the area surrounding the landfill to be developed for residential purposes. However, it absolved the EPB of any wrongdoing and upheld the legality of the EIA (SEPA, 2007b). Nevertheless, SEPA reiterated its recommendation that the project be temporarily suspended pending further inquiries (SEPA, 2007b).

SEPA's intervention did not quell the strong support for the incinerator within the Municipal and Haidian District governments. Nevertheless, construction plans had apparently been suspended. As campaigners were fully aware, the rapidly approaching 2008 Beijing Olympics ensured that the government did not want to provoke further social unrest. In the meantime, residents continued petitioning the government through letters and visits, although they consciously tried to avoid making the government 'nervous' by applying too much pressure (Interview with Liulitun campaigners, Beijing, 6 June 2011). Then, in early 2009, the Beijing Municipal DRC named the Liulitun incinerator among a list of major construction projects for that year. Residents responded with a petition letter containing over 10,000 signatures. The letter expressed frustration and anger that the Haidian District Government had ignored SEPA's instructions to solicit public opinion, and reiterated their concerns regarding public health. On 31 March 2009, residents produced a detailed 40,000-character report entitled 'Opinion Letter for Opposing the Construction of a Waste Incinerator in Liulitun' (hereinafter referred to as 'Opinion Letter') that they sent to numerous Beijing and national government departments (Beijing Haidian District Residents and Enterprise Staff, 2009). As well as further explicating earlier concerns, this report presented several suggestions to the government regarding its waste policy. In contrast to earlier in the campaign, residents portrayed themselves as trying to help the government resolve the waste issue. However, they maintained their strong opposition to the 'irresponsible' siting decision and implored the government to decide rationally and 'seek truth from facts'. As residents pointed out in their 'Opinion Letter', several influential public figures agreed that the siting decision was flawed. For example, in 2007, a member of the China People's Political Consultative Conference (CPPCC) had filed a report proposing that the incinerator be cancelled, as did a member of the Haidian District CPPCC. Qu Geping, the former head of the national environmental protection agency, publicly voiced his opposition to the choice of location. The decision to abandon construction of the Liulitun incinerator emerged in drips and drabs. In late 2010, the Haidian District Government announced plans to construct an incinerator, apparently in lieu of the Liulitun incinerator, at the much less densely populated Sujiatuo, approximately

20 km from Liulitun. Finally, in January 2011 and over 4 years since the project was announced, officials confirmed that the Liulitun incinerator would not be built.

*Gaoantun: 'The Rice Has Been Cooked'*

In 1995, a rubbish dump at Gaoantun in Beijing's Chaoyang District was converted into a waste treatment plant, and in 2002 a landfill was opened at the site. Similar to Liulitun, residents noticed a stench from the landfill that became progressively worse. The surrounding area was also developed for residential purposes. In 2004, local residents began petitioning the government via *shangfang* and *xinfang* channels, and filed a petition of 240 signatures. Officials promised them that action was being taken over the stench, but the problem remained unresolved (Interview with Gaoantun campaigner, Beijing, 6 June 2011).

Around the same time, and unbeknownst to residents, government officials had chosen Gaoantun as an incinerator site. In 1999, SEPA approved an EIA for an incinerator to be built next to the landfill. However, construction was delayed for several years, necessitating a second 'adjustment' (*tiaozheng*) EIA in 2004 that SEPA also approved. Construction of the Gaoantun incinerator started in November 2005, yet residents did not mobilize against it until 2007, by which time construction was virtually completed. One resident had noticed the incinerator but thought it was a factory (Interview with Gaoantun campaigner, Beijing, 6 June 2011). At that time, residents' knowledge of waste incineration was virtually non-existent.

The Liulitun case, which attracted considerable media attention, strongly influenced Gaoantun residents. Campaigners were alerted to the 'dangers of incineration' by the World Environment Day protest (Home Defence Action Group, 2008). Having become aware of the Gaoantun incinerator, several residents from the middle-class Wanxiang Xintian and Bolin Aile housing communities formed the Home Defence Action Group (HDAG) to oppose it. Similar to Liulitun campaigners, Gaoantun residents focused their opposition on legal issues related to the incinerator siting decision. Residents faxed SEPA in July and August 2007 asking to see the incinerator's EIA report. After SEPA refused, the HDAG held a meeting of about 40 residents in September where it revealed plans to submit an administrative review application challenging the decision to approve the EIA. HDAG organizers felt compelled to resort to a campaign of 'protecting our home through legal weapons' because government officials had not engaged them or addressed their concerns. Residents raised money and enlisted the services of Xia Jun following his involvement in the Liulitun case.

The residents filed their administrative review application with SEPA in October 2007. It requested that the 2004 EIA be revoked and that the incinerator be either terminated or temporarily suspended. When preparing the administrative review application, residents were allowed to see the abridged EIA but not to photocopy it. Similar to Liulitun campaigners, the administrative review application questioned the site's suitability and also criticized a lack of due process in the handling of the EIA (Zhou *et al.*, 2007). In relation to the former issue, residents argued that Gaoantun was an *even less* suitable location for an incinerator than Liulitun, which was, at this stage, on hold following SEPA's intervention.<sup>9</sup> They pointed out that the incinerator was upwind from densely populated areas. Residents also claimed that the 2004 adjustment EIA had not considered changes in local land use occurring since the original EIA was conducted in

1999. In that time, and similar to Liulitun, the surrounding area had been developed for residential purposes and the local population had increased substantially. They noted that Beijing's biggest government housing project (*liangxianfang*) was being constructed 1.5 km from the incinerator, further increasing the local population. Much to the chagrin of local residents, the EIA had stated that the surrounding area was unsuitable for the construction of luxury dwellings, but apparently suitable for building housing for low- and middle-income families. Gaoantun campaigners also questioned details in the EIA, including the distance of residences to the incinerator site, and technical matters relating to emissions generated from waste incineration. The administrative review application, therefore, also demonstrated a good understanding of technical and legal issues related to waste incineration, with campaigners benefiting from Xia Jun's experience from the Liulitun case. Campaigners also claimed that public participation was lacking and that SEPA had 'not only harmed our environmental rights and interests, but had also violated national laws' (Zhou *et al.*, 2007). According to local residents, SEPA had solicited public opinion for the incinerator from 50 nearby rural dwellers who were unlikely to oppose the incinerator. Although this technically met the loose public participation requirements under the EIA Law, anti-incinerator campaigners felt aggrieved that they had not been consulted. In January 2008, SEPA released its administrative review decision in which it upheld the legality of the 2004 EIA. Unsatisfied, residents appealed to the State Council. They accused SEPA of violating the Administrative Review Law by failing to provide sufficient evidence to support its decision. Residents demanded to view the full EIA report, but the State Council supported SEPA's position that the full report contained company secrets and should therefore not be disclosed.

As well as utilizing legal channels, Gaoantun residents organized several protest 'strolls' in the locality.<sup>10</sup> On 30 August 2008, local residents blocked a rubbish transportation vehicle in Gaoantun. Although residents used the protest to highlight opposition to the incinerator, it was mainly sparked by the stench from the landfill, which was processing additional waste from the Olympics.<sup>11</sup> This protest, deliberately staged after and not during the Olympics, won concessions for the residents regarding the stench.<sup>12</sup> Several days later, the Chaoyang District Government formally apologized and promised to invest 91 million Renminbi to resolve the problem within 20 days. Officials also met residents to discuss the incinerator. However, according to one campaigner, officials treated them with disdain, and shocked residents by apparently not having heard of dioxins (Interview with Gaoantun campaigner, Beijing, 28 November 2010).

Gaoantun residents ultimately failed to prevent the incinerator from operating. There were several important differences with the Liulitun case. For example, whereas the Municipal EPB had handled the Liulitun EIA, the Gaoantun EIA had been approved by SEPA. In requesting SEPA to overturn its own decision rather than the decision of a subordinate unit, Gaoantun residents were unable to obtain the kind of support enjoyed by their Liulitun counterparts.<sup>13</sup> Furthermore, the historical disagreement between environmental protection departments and local government that contributed to SEPA's opposition to the Liulitun incinerator was not evident in the Gaoantun case. Third, and most importantly was that the incinerator had already been built. To quote a Chinese proverb used by a Liulitun campaigner in relation to the Gaoantun case, 'the rice has been cooked' (Interview with Liulitun resident, 6 June 2011). This pushed the issue into a different level politically and limited external support. For instance, it would have been far

more difficult for a CPPCC representative or government department to call for the project's suspension because that would lead to huge financial losses. In the words of one campaigner, 'no leader would dare [order the incinerator's demolition] ...' (Interview with Gaoantun campaigner, Beijing, 28 November 2010). The feeling that the government would never reverse its decision arguably undermined the campaign, as many residents became resigned to the incinerator's existence and eventually gave up. This low morale was partly reflected in the nature of the campaign, with several interviewees describing Gaoantun residents as being less united and less persistent than those at Liulitun (Interview with Liulitun residents, 6 June 2011; interview with waste expert, 7 June 2011). One campaigner complained that neighbours were willing to 'free ride' on the efforts of several dedicated individuals (Interview with Gaoantun campaigner, Beijing, 28 November 2010). Residents were also more inclined to pursue their own individual cases. For example, in late 2008 local resident Zhao Lei filed a lawsuit against the waste operators after suffering from respiratory problems that she linked to the waste site. Zhao lost the case and subsequently sold her property and moved away. In addition, although Liulitun residents also came under pressure from the state, this was more pronounced at Gaoantun, with plainclothes police warning HDAG organizers that they would 'bear the consequences of their actions' (Interview with Gaoantun campaigner, 6 June 2011). Finally, Gaoantun residents predominantly consisted of young white-collar workers who lacked time to spend on research and campaigning, and who did not benefit from the same political connections enjoyed by some Liulitun residents.

*Asuwei: 'Towards a Win-Win Situation?'*<sup>14</sup>

Asuwei, in northern Beijing's Changping District, has hosted the city's largest landfill since it was constructed in 1994. It was subsequently chosen as a waste incineration site as part of the Beijing DRC Domestic Waste Plan. Residents from nearby Aobei, a wealthy neighbourhood of expensive villas, learned about the incinerator in 2009 when one of them visited the township government office to complain about traffic noise. By chance this resident saw a notice (*gongshi*) inviting public comments on the proposed incinerator. Denied permission to photocopy the notice, one of only three that had been posted in the entire city, she photographed it and distributed it amongst her neighbours.

Initially, Aobei residents framed their opposition to the incinerator as a 'rights upholding' campaign in which, similar to the other two cases, they challenged the siting decision from a legal perspective. Local residents established a 'rights upholding small group' and created two websites for exchanging information. From early August 2009, residents utilized *shangfang* and *xinfang* petitioning channels. Campaigners were unhappy with the lack of public participation in the initial siting decision, and argued that Asuwei was an unsuitable site due to its being upstream and upwind of densely populated areas. After failed attempts to meet local officials, several residents drove their cars around the area displaying anti-incineration banners. In response, officials from the municipal, district, and township governments met with residents and defended the legality of the EIA. After the meeting, residents commented that officials had been unable to answer their questions (*Southern Metropolis*, 2010). Despite having defended the original EIA report, on 14 August officials placed a notice in the *Beijing Daily* newspaper inviting public comment on the incinerator. After residents expressed

their opinions through this channel, the BMCCAE suspended construction until a new EIA was approved. Despite this concession, on 4 September over 100 Aobei residents in 60 cars converged on the Agricultural Exhibition Centre where the Asuwei Circular Economy Park was being honoured at the 2009 Beijing Environment and Hygiene Fair, and erected anti-incineration banners. A few residents were arrested and imprisoned for several days. Meanwhile, the BMCCAE opened a temporary office in the local township government to collect residents' views in the hope of diffusing the situation.<sup>15</sup>

After the protest, residents began questioning their adversarial 'rights upholding' approach that challenged the incinerator siting decision. In part, they were dissuaded by the authorities' strong response to their public protest. At the same time, a change in approach was necessitated by problems in mobilizing sufficient support (Interview with Asuwei campaigner, 29 November 2010). Compared with densely populated Liulitun and Gaoantun, which had many residents prepared to take to the streets and pressurizing the authorities, Aobei residents were much fewer in number. Many Aobei villas were second homes, and therefore were sometimes unoccupied. Furthermore, wealthy Aobei residents failed to win support of nearby communities. This was partly because nearby villagers were happy to accept compensation from the government. Some even carried out home improvements in the hope that they would subsequently obtain more compensation if and when the government relocated them. It was even suggested that poorer communities enjoyed seeing their rich Aobei neighbours suffering.

In response to these difficulties, Aobei residents changed their approach and began emphasizing their desire to work *with* the government in finding a solution to the waste problem. Aobei residents portrayed themselves as helping the government find a solution to the MSW issue from a public interest perspective rather than from a NIMBY perspective. By building up their own expertise and downplaying the 'rights upholding' position, campaigners hoped to become participants in the policy process rather than opponents of the government (Interview with Asuwei campaigner, 29 November 2010). Similar to Liulitun (and, to a lesser extent, Gaoantun) residents, Aobei residents built up technical expertise concerning MSW management. Residents formed a 'research small group' that produced a very detailed 64-page report into waste incineration (Beijing Aobei Volunteers' Research Group, 2009). This benefited from the fact that one resident had strong professional knowledge of the waste incineration industry. In contrast with the Liulitun 'Opinion Letter', which predominantly focused on the attacking the government's 'irresponsible' siting decision, Aobei residents' report only criticized the Asuwei incinerator siting decision very briefly. The main part of the report compared China's waste incineration situation with other countries in order to highlight more generic problems associated with the former's waste incineration policy. Problems faced by China included that:

- Waste incinerator emission standards are too low; for example, the report claimed that EU dioxin emission standards are 10 times stricter than China.
- The legal framework for waste incineration is poorly developed, weak and ineffective.
- The scale of incinerators being built in China is much greater compared with overseas ones.

- There are major problems with the Chinese incinerator technology and management, particularly the lack of incinerator supervision.

The report concluded that China's 'national circumstances' (*guoqing*) were unsuitable for waste incineration.

Rather than merely criticize Chinese waste incineration policy, the report made a number of suggestions on improving waste management. One suggestion involved transporting waste by train to Inner Mongolia and burying it in the desert. They also suggested that the government focus on waste reduction, and learn from the experiences of Canberra, Edmonton, San Francisco, and the Brazilian Business Commitment for Recycling. In addition, the report stated that, 'we hope the government can be a bit more transparent, and give us truthful information' (*Business Watch*, 2010). In that way, citizens would be able to check and balance corrupt and dishonest officials whom they suspected would cut corners to keep costs down, including by failing to burn waste at a high enough temperature. According to this view, residents were not opposed to waste incineration as long as the process was well managed, which meant having advanced technology, strong enterprise management, government and public supervision, and transparency. According to one interviewee, if these conditions were met then local residents would not oppose the incinerator (Interview with Asuwei campaigner, Beijing, 29 November 2010).

The government was reportedly surprised by the depth and quality of the campaigners' report, which residents have updated regularly (Interview with Asuwei campaigner, Beijing, 29 November 2010). Interaction between campaigners and officials was further facilitated by the involvement of waste expert Wang Weiping, who met Aobei residents on several occasions and who became a go-between for residents and the government. At Wang's suggestion, the Beijing Municipal Government invited prominent campaigner Huang Xiaoshan on a 10-day visit to Japan and Macau to inspect waste treatment facilities. The state media portrayed this as a highly important and symbolic gesture. One media report suggested that the government's decision to invite Huang shows that the government and public have found a common language and can cooperate together towards a 'win-win' situation (*The Beijing News*, 2010a). However, suspicions were also voiced that Huang was being co-opted by the government (*Southern Metropolis*, 2010). One Liulitun campaigner stated that it is easier for people such as Huang to make connections with the government because of their high social status and personal connection (*guanxi*) networks (Interview with Liulitun campaigner, Beijing, 5 June 2011). They could also use these connections to fight against the incinerator whilst publicly portraying themselves as promoters of the public interest (Interview with waste expert, 3 July 2012).

In April 2010 municipal officials launched the 'Be a Civilised and Polite Beijing Person—Carry Out Waste Sorting and Reduction' campaign, which included setting up waste sorting pilot projects in 600 communities. Asuwei residents credit their own efforts with this development (Interview with Asuwei campaigner, Beijing, 29 November 2010), although it is difficult to determine the extent of their influence. In any case, through their research and willingness to look at the waste problem from a broader public interest perspective, Asuwei residents showed that the public need not only be an impediment to the government's waste policy. In April 2011, it was announced that the construction of the Asuwei incinerator would begin that year. Yet as of June 2012 construction had

not begun, and interviewees were unsure as to what would happen (Interview with waste expert, 3 July 2012; interview with NGO staff member, 3 July 2012). It remains unclear whether the incinerator will be built and, if so, whether it will meet the high standards requested by residents.

## Discussion

Since the Liulitun anti-incineration campaign began in 2006, Beijing residents and officials have undergone a learning process. Anti-incineration campaigners have learnt from each other and in some cases have become lay experts. Officials have learnt lessons and have begun to modify their incineration strategy.

### *Citizens as Experts*

Tension between government and industry experts and citizens regarding who should make decisions concerning potentially polluting projects has been a key feature of contention over waste facility siting in Western countries (Fischer, 2000). Fischer (2000) has argued that expertise has become a key dividing line in struggles over such projects. Numerous cases have been documented of 'citizen experts' (Tesh, 1999) developing their own expertise in technical and legal aspects of siting issues to counter perceived bias from government and industry experts (see, for example, Fletcher, 2003; Freudenberg, 1984; Shemtov, 1999).

One of the most striking aspects of the three Beijing campaigns was how citizens developed legal and technical expertise through self-study and contact with experts. This 'expert strategy' was particularly prominent in the Liulitun and Asuwei campaigns, and was adopted for several reasons. First, campaigners required to show that they understood the issues. One Beijing Municipal People's Congress (BMPC) member and incineration proponent claimed that the public 'do not understand' technical and scientific information, therefore implying that public disclosure on emissions information was unnecessary (Interview with BMPC member, Beijing, 10 June 2011). Confronted by this type of attitude, campaigners felt that to appear credible and make the government (and wider public) listen, they had to argue their case based on 'adequate reasoning and evidence' (*you li you ju*) (Interview with Liulitun campaigner, Beijing, 5 June 2011). Second, campaigners' expert strategy was a response to the discovery that many local officials were poorly informed and lacked technical and policy expertise concerning incineration. In other words, citizens accumulated local knowledge partly to prove that siting decisions had not been predicated upon sound technical knowledge (or even basic common sense), but had been taken arbitrarily. One interviewee described this lack of knowledge as the government's 'Achilles' heel', and suggested that, "'officials" [waste incineration] knowledge is behind that of the public' (Interview with waste expert, Beijing, 7 June 2011). Through studying legislation and accumulating local knowledge, participants in all three campaigns highlighted basic errors and illegalities regarding site selections. Particularly in the Asuwei case, this extended to a broader critique of the MSW policy. One campaigner claimed that the government is 'lazy' and that officials simply search for the easiest solution, namely burning rubbish without taking an holistic view of the issue (Interview with Asuwei campaigner, Beijing, 29 November 2010). This development of counter-expertise made it harder for

officials to marginalize residents as irrational NIMBY campaigners. As one campaigner stated, 'I'm not just going to say 'you shouldn't build it here'; I'm going to tell you *why* you shouldn't build it here' (Interview with Asuwei campaigner, Beijing, 29 November 2010). Third, the expert strategy was utilized to benefit from divisions within the scientific community. Campaigners in all three cases approached experts they knew to be sceptical about, or downright opposed to, incineration so as to obtain technical information and support. In an interesting juxtaposition between *shangfang* and *xinfang*, Liulitun campaigners referred to this as one strand of a '*baifang*' ('visit') strategy. Some experts such as Zhao Zhan-yuan spoke out publicly against incineration and furnished campaigners with useful technical information. Expert support was particularly important given the relatively weak capacity of Chinese environmental NGOs in this respect (Interview with NGO staff, Beijing, 8 June 2011). A final rationale for pursuing an expert strategy was to depoliticize the issue by focusing on legal and technical matters. By performing the role of 'citizen experts' offering constructive suggestions concerning waste policy, residents could portray themselves as concerned citizens supportive of the public interest. Campaign participants distinguished between correcting perceived injustices through legitimate 'rights upholding' and political activism. A Gaoantun campaigner stated that, 'the overall principle was that we don't support people sacrificing themselves; violent confrontation with the government can't solve any problems, it will only intensify the contradictions (*maodun*), people's personal safety would be jeopardised' (Interview with Gaoantun campaigner, Beijing, 28 November 2010). Indeed, the second strand of Liulitun campaigners' *baifang* strategy involved visiting government officials in an 'informal' rather than overt 'petitioning' *shangfang* or *xinfang* context in order to discuss incinerator-related issues. This strategy was utilized more fully by Asuwei residents, culminating in Huang Xiaoshan's inclusion in the Japan study tour.

Campaigners pursued an expert strategy to different degrees. For example, unlike Liulitun and Asuwei residents, Gaoantun campaigners did not publish research reports. According to one prominent Gaoantun campaigner, Liulitun residents included many retired intellectuals, which enabled them to conduct research and built up counter-expertise against the state (Interview with Gaoantun campaigner, Beijing, 6 June 2011). Asuwei residents also included individuals with time and research skills. Participants in the Liulitun and Gaoantun cases focused more on accumulating legal expertise in order to challenge the siting decisions, whilst supplementing this approach with other tactics including public protest. One interviewee said that 'if [citizens'] tactics are too soft, the government will simply ignore you' (Interview with Liulitun campaigner, Beijing, 29 July 2009). Although Aobei campaigners initially opposed the Asuwei incinerator siting from an adversarial 'rights upholding' approach, they subsequently decided that a policy advocacy approach was more effective for their circumstances. This has arguably helped to stimulate wider discussion about waste treatment in Beijing; however, it may not be enough to derail the Asuwei incinerator.

### *Government Learning*

Government officials in Beijing have adapted their tactics with regards to incinerator siting in response to societal opposition. Faced by citizens who are becoming increasingly vigilant concerning waste incineration, some local officials have tried

to show sensitivity to citizens' concerns. For example, Chen Yong has publicly stressed the need for governments to publicly disclose information concerning incinerator emissions, whilst also calling for improvements in public participation channels (*The Beijing News*, 2010b). The Gaoantun incinerator, which remains the only operational incinerator in Beijing, is open to the public every Thursday. Furthermore, a digital public information screen displaying data about the Gaoantun incinerator's emissions was installed on-site following a suggestion filed by a local BMPC member. In addition, the public has twice been invited to submit comments regarding the Sujiatuo incinerator. Although these developments suggest early steps towards greater transparency and public engagement, in reality they appear superficial, tokenistic, and geared towards public appeasement. For example, on 10 June 2011, I visited the Gaoantun incinerator and observed the public information screen. Although it displayed data about dioxins, the chief health concern for anti-incinerator campaigners in all three cases, this information was based on a sample from 22 February. When questioned about this time lag, the BMPC member accompanying me revealed that measuring dioxins is 'too expensive' (Interview with BMPC member, Beijing, 10 June 2011). Furthermore, information from the screen is not available online, and the screen itself is inside the waste treatment compound and therefore not always accessible to the public. For all intents and purposes, this screen appears to tally more with one campaigner's dismissive remark about it being there to 'look good' (*hao kan*) rather than representing an attempt to improve transparency (Interview with Gaoantun campaigner, Beijing, 28 November 2010).

Similarly, the soliciting of public comments for the Sujiatuo incinerator appears more related to the unique circumstances of that facility than being a serious move towards greater public engagement. Although the Sujiatuo incinerator will replace the one planned at Liulitun, the latter site will play a role in separating waste before it is sent to Sujiatuo. Given the strong public opposition to the Liulitun incinerator, Haidian District Government officials are keen to minimize any further potential opposition by following proper procedure regarding public opinion solicitation (Interview with NGO member, Beijing, 8 June 2011). At the same time, evidence suggests that local officials in Beijing and elsewhere are learning to circumvent opposition by selecting sites in more remote locations where opposition is weak, and by further limiting transparency. In 2011, a BMCCA official stated that, 'if you want to be successful in selecting a location [for an incinerator], before construction begins you can't reveal it. This is because as soon as you choose a site, nearby residents will oppose it' (*The Beijing News*, 2011). Rather than embrace transparency and public consultation, in 2010 municipal government officials pushed through the approval of an incinerator, set to be Asia's largest, at Lujishan on a site formerly owned by the Capital Steel Company in western Beijing just outside the Sixth Ring Road. The Lujishan incinerator was approved extremely quickly even by Chinese standards (*Southern Weekend*, 2011). Zhao Zhangyuan claimed that it obtained the roughly 80 necessary approval stamps within just 3 months, during which time public comment was not solicited (*Southern Weekend*, 2011). The full title of the project, namely 'Beijing Capital Steel Biomass Power Project', makes no reference to incineration. The Sujiatuo incinerator's official title of 'Beijing City Haidian District Circular Economy Industrial Park Renewable Energy Electricity Generation Plant Project' is similarly reminiscent of 'incinerators in disguise' found in other countries. The Lujishan incinerator was unveiled on 23 October 2010 by senior

officials in a public show of support. The strategy of rushing through incinerators to circumvent opposition may lead to lower standards due to a less rigorous planning process. Finally, there are indications that officials in Beijing are pursuing a strategy of expanding existing incinerators rather than attempting to site facilities in new locations. For example, in 2011 approval was granted for a 'second phase' (*erqi*) of the Gaoantun incinerator to be constructed, with a daily capacity of 1800 ton. A third phase is apparently also under consideration (Interview with NGO staff member, 3 July 2012). A second phase of the Lujiashan incinerator is also being planned, which would increase the capacity to at least 5000 ton per day. Although this helps officials to limit opposition, it also raises the stakes for communities reluctant to allow incinerators to gain a foothold in their neighbourhoods.

### **Conclusion: Implications for Waste Incineration Policy in China**

The three case studies examined in this article highlight the limitations of a non-participatory MSW policy in a context where ordinary citizens are increasingly aware of their legal 'right' to be consulted and informed about siting decisions. Top-down, opaque decision-making processes with regards to the siting of unpopular waste incinerators have collided with citizens who mobilize strongly in defence of their interests using the rhetoric of 'rights-upholding', and who develop their own technical counter-expertise against the state. Due to societal opposition, Beijing will fail to achieve its 11th FYP goals for MSW management. In July 2010, Chen Yong admitted that the 4:3:3 objective would not be achieved until 2015, 4 years behind schedule (Chen, 2010). The short-term target was downgraded, with officials aiming to achieve a ratio between incineration, composting, and landfill of 2:3:5 by 2012 (Chen, 2010). Chen identified disagreements, problems in site selection, and a lack of public understanding as key factors that had inhibited Beijing's MSW policy (*The Beijing News*, 2010b). From the government's perspective, the public has, therefore, undermined its top-down MSW strategy in the short term.

Although Chinese anti-incineration campaigns and government responses display their own unique characteristics, there are also striking similarities with earlier anti-siting campaigns in the West. However, in the longer term it is highly unlikely that public opposition to incinerator siting decisions will undermine the promotion of incineration in China to the same extent as incineration was undermined in, for example the USA. Despite opposition, officials within the Beijing municipal and district governments remain committed to incineration. As demonstrated by the Lujiashan, Sujiatuo, and indeed Gaoantun incinerator sitings, government officials in illiberal China are in a very strong position when it comes to pushing through projects in secrecy, and deflecting lawsuits by aggrieved citizens. In addition, anti-incinerator campaigns in China are predominantly localized and NIMBY-focused. Prospects for disparate campaigners to form a movement strong enough to challenge the state's incineration policy seem remote. The CCP remains extremely nervous about geographically disperse groups forming a wider network that could challenge its monopoly on political power (Ho, 2007). That is not to say that campaigners within Beijing and beyond have not begun to network with each other. Internet community bulletin boards, which residents use to share materials and vent opinions, are easily accessible, and can be a useful source of information for

campaigners seeking to learn from other campaigns. In addition, the Beijing-based environmental NGO Green Beagle conducts regular waste-related seminars featuring expert speakers and study trips to waste facilities. Campaign leaders from as far afield such as Guangzhou and Shenzhen have participated in these events, along with their Beijing counterparts. They have been able to share their campaigning experiences in person and learn about broader waste management issues. However, this type of networking is low profile and, similar to the campaigns themselves, steers away from any overt political agenda. At least in the short term, the main impact of this informal networking is to help middle-class homeowners resist incinerator sitings in their own backyards. Although beneficial to middle-class homeowners, this may have implications for environmental equality in China as local officials adapt their incinerator siting tactics. Part of the Beijing municipal government's rationale for siting incinerators at the more sparsely populated Sujiatuo and Lujiashan is the fact that many local residents are relatively poor peasants. These people are more easily placated through compensation and are therefore less likely to oppose an incinerator (Interview with NGO staff member, 8 June 2011). The decision to build Beijing's largest *liangxianfang* next to the Gaoantun incinerator also suggests that less resourceful poorer residents may have to bear the brunt of China's incineration expansion. The locating of incinerators in areas of social deprivation has been a key driver of the environmental justice movement in the USA (Rootes, 2009). Ironically, largely middle-class anti-incineration campaigns of the type examined by this article that demand a 'fairer' decision-making process could lead to greater environmental injustice in China, perpetuating the notion that MSW, 'tumbles downhill to settle in places of least resistance, among the poor and disenfranchised' (Royte 2005, p. 40). Given China's growing waste crisis and public opposition to incineration, it is likely that contention will increasingly be a factor in its MSW policy.

### Acknowledgements

The author would like to thank the following people for their comments and suggestions: Genia Kostka, Arthur Mol, Rachel Stern, colleagues from the City University of Hong Kong Governance in Asia Research Centre, and the anonymous reviewers. Any errors remain the author's alone. The work described in this paper was fully supported by a grant from the College of Liberal Arts and Social Sciences, City University of Hong Kong (Project No. 9610162).

### Notes

1. The 2% incineration figure apparently refers to a small-scale, informal incineration. One government-affiliated expert expressed doubt about the reliability of these statistics (Interview with waste expert, Beijing 7 June 2011).
2. The 'city area' generates over two-thirds of Beijing's MSW.
3. According to *The Guardian*, less than 4% of Beijing's waste is recycled (*The Guardian*, 2010).
4. Although the decision to build an incinerator was made in 2005, residents reportedly only became aware of it in November 2006 after they saw the Beijing Municipality 11th FYP (Beijing Haidian District Residents and Enterprise Staff, 2009).
5. In using the term 'unscientific', campaigners invoked the language of President Hu Jintao and his calls for 'Scientific Development'.

6. Authorities are only required to release abridged versions of EIA reports to the public.
7. According to one resident, they converged on SEPA headquarters not to protest but to 'celebrate World Environment Day' (Interview with Liulitun resident, 4 July 2012). However, the intention was undoubtedly to place pressure on the government.
8. This is the conclusion reached by a meeting of anti-incineration experts and NGO representatives (meeting minutes on file with author).
9. No evidence was provided to support this claim.
10. Without prior approval from the authorities, protests are technically illegal. Urban residents try to get around this by dubbing their actions 'strolls'.
11. According to one Liulitun resident, Gaoantun had to deal with much more waste during the Olympics, as the government was reluctant to send extra waste to Liulitun for fear of provoking unrest (Interview with Liulitun campaigner, 6 June 2011).
12. In contrast, Fletcher (2003) has documented how activists in Toronto used the city's bid to host the 2008 Olympics to apply pressure to the city government.
13. Furthermore, Pan Yue was reportedly sidelined during 2008, apparently because of his outspokenness and willingness to go after large-scale projects that had violated EIA procedures.
14. This account draws heavily from *Business Watch* (2010).
15. According to one waste expert, this was a sign that government officials had learned from the Liulitun and Gaoantun cases by making themselves (at least appear to be) more accessible to local residents (Interview with waste expert, Beijing, 7 June 2011).

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