CONSUMPTION AND SUSTAINABILITY IN ASIA

Stefan Landsberger

Beijing Garbage

A City Besieged by Waste

Amsterdam
University
Press

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Consumption and Sustainability in Asia

Asia is the primary site of production of a myriad of commodities that circulate the globe. From cars and computer chips to brand clothing, material objects manufactured across Asia have become indispensable to people's lives in most cultural contexts. This mega production generates huge amounts of waste and pollution that threaten the health and lifestyle of many Asians. Yet, Asia is not only a site of production, but also one of the most rapidly growing consumer markets.

This series focuses on consumption – the engine propelling Asia onto the world economic stage – and its implications, from practices and ideologies to environmental sustainability, both globally and on the region itself. The series explores the interplay between the state, market economy, technologies, and everyday life, all of which have become defining facets of contemporary Asian culture. Shifts in consumption that have taken place across Asia since the 1950s have had a deep impact on new and emerging informal economies of material care, revealing previously invisible sites of innovation, resistance and co-option. The series will bring together studies by historians, anthropologists, geographers, and political scientists that systematically document and conceptualize Asia's engagement with consumption and sustainability in the global environment.

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The research for this publication took place under the auspices of the Garbage Matters: a Comparative History of Waste in East Asia Project, funded by the Netherlands Organization for Scientific Research (NWO), project number 277-53-006.

Cover illustration: Collected paper and cardboard waiting to be moved to the next higher collection point for further processing, Haidian District, Beijing
Author's photograph, April 2017

Cover design: Coördesign, Leiden
Typesetting: Crius Group, Hulshout

ISBN 978 94 6372 030 4
e-ISBN 978 90 4854 287 1 (pdf)
DOI 10.5117/9789463720304
NUR 740

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Introduction

Solid waste has become an increasingly difficult problem to deal with worldwide, particularly in the urban areas that cover an ever-growing percentage of the globe. People now buy more things, because the products they have acquired break down more quickly and easily as a result of planned or built-in obsolescence (Lucas, 2002; Clapp, 2002; O'Brien, 2013). Repairing broken goods is often more expensive and less convenient than simply buying a new product, even in nations where repairing work used to thrive (McCollough, 2007; McCollough, 2012). People buy more because they can – due to increased incomes, more leisure time, and the explosive growth of places of purchase (Featherstone, 1993; McCollough, 2007; Cooper, 2010; McCollough, 2012). Owning things has come to signify status, which used to be derived from one's work or social position. People buy more simply because others do; they buy newer versions of products that have must-have functions that are lacking in earlier versions. People desire new products because recommissioned or refurbished articles carry the stigma of being broken or soiled (Lucas, 2002). Products distinguish themselves through packaging. As Jennifer Clapp points out, 'goods are packaged to enhance their ability to travel long distances, to give them uniformity of size for efficient distribution, to keep them sanitary, to increase their convenience of use, and to make them more appealing' (2002: 162-163). Packaging is 'inherently linked with the ritual of shopping, which stimulates the desire to buy and facilitates and enhances the endless loop of consumption' (Machotka and Cwiertka, 2016: 32). To quote from a report by McKinsey & Company and Ocean Conservancy, '[S]pecifically, plastic packaging is increasingly used to promote food safety and preserve freshness and quality as products move over greater distances and have longer shelf-life requirements. Also, in an effort to cater to lower-income consumers, companies are shrinking product-distribution sizes, creating more units of packaging per gram of product' (2015: 33). Ideally, all of these discarded (packaging) materials can be recycled or recommissioned, but despite many pious pronouncements and more or less idealistic international agreements and conventions, this seems to be an unattainable goal.

There are various ways to deal with the ever-growing amounts of solid waste, to avoid creating a situation where humankind is swallowed by it. Many if not most nations have followed a comparable trajectory of waste disposal management. Traditionally, landfills have been used to remove waste from sight by burying it. However, the volume of discarded matter

has grown to such proportions that landfills are no longer adequate. With (urban) populations expanding, landfills threaten to take up too much of the space that is required for other purposes, such as construction. Moreover, landfills have moved beyond the simple burying of waste materials. Over time, the nature of waste materials has changed, their quantity has grown, and the regimes governing their disposal have become more complex and costly, factoring in both hygiene risks and social demands. Landfill sites need special preparations and facilities to avoid secondary pollution in the form of potentially toxic materials that could enter the soil and contaminate ground water; the pervasive smell of rot and corruption needs to be masked, and so on. Another tried and proven method of removing waste has been recycling, if and when materials or parts of products can be reused again. Recycling tends to be labour-intensive and dirty work, and is often associated with people who have been rejected by society or who have no other way to survive (Drackner, 2005; Yates, 2006). Most recently, incineration or the burning of waste on an industrial scale, often producing marketable side products like electricity or warmth, has received strong political support and as a result strong development worldwide. However, it seems that none of these approaches will be able to solve the problem by themselves, without decreasing (over-)consumption by us, the people.

Theorizing waste and consumer culture

Over time, waste has been defined and theorized in many ways by scholars, who are mainly from Western, industrialized countries. Among the plethora of definitions and theories, Drackner has created a useful catch-all typology by arguing that waste is '*something* that is discarded by *someone*', implicating its uselessness (Drackner, 2005: 176, italics in original). Whatever the definition applied in whichever culture, dirt, waste, or non-matter needs to be eliminated in a positive effort to organize the environment (O'Brien, 1999). Mary Douglas studied ritual pollution and uncleanness, and famously saw waste, or dirt, as matter out of place; more recently, Tim Cooper considered it abject (Douglas, 1966: 36; Cooper, 2010). Be it called dirt, waste, or trash, the societies in which it appears want to get rid of it. At the same time, waste appears in dynamic categories and guises that express different values (Moore, 2012). For example, one person's waste can serve as another's livelihood (Drackner, 2005: 176). This opens avenues for contestation about waste's final displacement, a topic that has now become particularly salient. But waste is more than merely a problematic object that raises questions

about its final destination; it can also be seen as something symbolically positive: a marker representing unproductive privilege, industrial efficiency, and wealth (Varul, 2006).

Pre-industrialized, proto-industrialized, or early industrialized societies were not plagued by questions of where to make non-matter end up, simply because there was not a lot of it to deal with; the small amounts of dirt, waste, or matter-out-of-place that were created were disappeared in ritual or other ways. Many if not most of these societies were characterized by a culture of scarcity and maintained an ethos of frugality (Dikötter, 2006; Van Dam and Jonker, 2017; Cwiertka and Machotka, 2018). In these frugal societies, goods were used, re-used, or re-appropriated into use until what was left had no use left. Moreover, the final manifestations of these goods tended to be of organic composition, allowing for them to disintegrate and disappear with hardly any mark or trace. As societies developed over time, their economies expanded and urbanization proceeded apace. In the eighteenth century, the amount of waste produced by households increased and questions were raised about its disposal: the increase in waste in the built-up urban environment can be partly attributed to the disappearance of the open kitchen fire, where previously most of it had been burned as fuel (Lucas, 2002; Drackner, 2005; Reno, 2014). Household waste was considered 'inefficient and arising through improper [domestic] management' (Lucas, 2002: 6) – in other words, caused by people or consumers. As populations and waste ballooned, concerns about the connection between waste and the spread of diseases proliferated. Waste thus came to be seen as unhygienic, unhealthy, and without value.

The link between processes of urbanization and the emergence of waste-as-a-problem is highly significant. Urban centres grew rapidly as a result of migration patterns (Drackner, 2005). Members of rural communities were used to composting what could not be burned, and more importantly had the space to reserve plots for this purpose; composted waste was applied to the nearby fields as a fertilizer or soil enricher. The emerging often densely populated urban communities, on the other hand, lacked spaces for proper waste disposal, and their inhabitants' knowledge and practice of proper disposal practices had dissipated, leading to an increase in perceived threats to and concerns about public hygiene and health. As waste became more prevalent and was seen as actually endangering society, it became an object that deserved more and more study. Consequently, the studies that have emerged over time as a result of this attention focus more on questions of waste management, particularly the role of the waste producer, i.e., the consumer, and less at the nature of the waste itself. Most energy has been devoted to probing the problems related

to consumer waste, which is often seen as more problematic than industrial waste, even though the latter was and continues to be produced in much greater amounts and with more profound and detrimental effects on the environment (Yates, 2006; Gille, 2010; O'Brien, 2013).

Since the first identification of the consumer-as-waste-producer in the eighteenth century, each subsequent generation of waste producers has been considered more wasteful than the preceding ones. It is only logical, then, that their behaviour was seen as resulting in ever growing amounts of disposed matter. This wasteful behaviour and the waste itself have been explained as the result of the arrival of consumer culture, and, more negatively still, the 'throwaway society' (Debord, 1994 [1967]; Lefebvre, 1995 [1962]; Baudrillard, 1998 [1970]; Featherstone, 1998 [1991]; Lucas, 2002; McCollough, 2012; O'Brien, 2013; Hellmann and Luedicke, 2018). Most theories about consumer culture trace its emergence to the end of World War II, and more specifically to the 1960s, when the concept of the 'throwaway society' also emerged (Lucas, 2002); other theorists have traced its roots to 1890-1920, when mass production and mass distribution brought more products and services to ever larger numbers of people (Strasser, 2003: 379). Some scholars deplore this turn towards consumption (Baudrillard, 1998 [1970]), considering the replacement of what was valued as durable with the shallow, new, and disposable to be a debasement of society. Others see the process as a 'profound transformation of society, with the consumer society (production organized for the market) having taken over from blind production or production for production's sake' (Lefebvre, 1995 [1962]: 196) leading to a situation where 'the manufacturers of consumer goods do all they can to manufacture consumers' (Lefebvre, 2002 [1961]: 10). Mike Featherstone (1998: 13) helpfully summarizes these scholarly views into three perspectives that move from the consumed goods themselves, to their external value, to what they generate. The first touches upon the expansion of capitalist commodity production, which has given rise to the vast expansion of material culture through the increase of consumer goods and sites to purchase and consume. The second perspective focuses on how people use goods to create social bonds or distinctions. The third perspective deals with the emotional pleasures of consumption – as Tim Cooper describes it, the culture of consumption driven by advertising, disposability, and the supermarket (2010: 1118).

Many analyses of consumer society seem to be tinged with a sense of loss and nostalgia, permeated by a yearning for days gone by when consumer goods were acquired for their use value instead of their exchange value or the status they bestowed on the owner; they wax poetic about a time when

a consumer good would last a lifetime and could be passed on to the next generation still in working order. They are also vaguely ideological and conservative, deploring the disappearance of the time when the imagined community to which the authors feel they belong was smaller and less influenced or manipulated by external or foreign (mainly American) influences (Anderson, 1991; Debord, 1994 [1967]; Lefebvre, 1995 [1992]; Baudrillard, 1998 [1970]; Lefebvre, 2002 [1961]; Kaplan, 2012). These moral critiques of escalating demand, high product turnover, and built-in obsolescence in a society increasingly looking for leisure and convenience, are combined with sociological analyses of economic and cultural changes relating to levels of affluence, patterns of taste, and industrial innovation. This combination of theoretical perspectives results in the view that there is something particularly wasteful about contemporary society; that consumers are 'uniquely profligate, ignorant, disdainful of their consumption behaviour' compared to preceding generations (O'Brien, 2013: 20). In the opinion of these theorists, wastefulness has evolved into a cultural force. Indeed, as Hélène Cherrier puts it, consumerism points to the incessant acquisition of 'new, modish, faddish or fashionable, always improved and improving' goods; it nurtures an ideology of newness and creates a space where the old, the past, and the worn-out have no place (2010: 260).

However, careful historical studies of consumer behaviour over longer periods of time have demonstrated that the amounts of waste that present-day consumers discard are not necessarily larger than those of their predecessors (O'Brien, 2013). The composition of present-day waste certainly has changed: ashes from the kitchen fire, for example, have largely disappeared from consumer garbage, and their place has been taken by other types of disposed matter. Moreover, reusable waste (packaging) has given way to disposable packaging, largely as a result of greater attention to (personal) hygiene (Clapp, 2002). Buying new is considered to be clean (Lucas, 2002: 12), resulting in an increase in packaging. Moreover, consumer goods have come to be produced from less easily disposable materials and resources, and their disposal often has more lasting, seriously polluting, and toxic effects on the environment. The principle of built-in obsolescence has created vast graveyards of broken-down and discarded goods and gadgets, the latter of which Baudrillard (1998 [1970]) considered to be especially exemplary of consumer culture: a product that was wasteful and shallow, for which no further employ could be found.

Other theorists see the emergence of consumer society as the logical result of the fact that the nature of waste itself has been transformed. Waste has become a commodity, part of a scheme of production and consumption, or

even just another raw material or resource. As such, it is no longer merely disposable, but has itself acquired a consumption value (O'Brien, 1999: 277, 281, 282). This has created the phenomenon of waste regimes – social and political constellations that demand the production of certain kinds of waste by producing a certain kind of goods (Cooper, 2010: 1119, quoting Gille, 2007; Evans, Campbell, and Murcott, 2013). Waste has given rise to vast economic sectors that provide income to multinational conglomerates, local authorities, and individual waste operators (O'Brien, 1999: 282). Seen from this perspective, waste is not a mere by-product of conspicuous consumption or the remainder of an excessive economy; rather, it exists in 'a society awash with rubbish: as a manufactured part of the world of goods involving labour, exchange, licensing, regulation and profiteering' (O'Brien, 1999: 286; Gille, 2010) and has become a fundamental and inalienable part of production.

However, as Gille makes clear, even though society entices people to acquire material goods, the 'consumer does not *make* garbage, nor do they make trash or have any choice in the materials they buy and turn into surplus stuff' (2010: 1050, italics in original). Following Lefebvre (2002 [1961]), people have been made part of, or have been implicated in, an economic mechanism in which they are supposed to create junk so that it can then be turned into a newly reusable resource. And even though attempts have been made to break through the principle of the built-in obsolescence of goods, this in itself does not guarantee a more efficient or ecologically less intrusive production process (Murray, Skene, and Haynes, 2017). Discarding possessions is often not the consumer's first choice; as Gregson, Metcalfe, and Crewe put it, 'to throw away (certain sorts of) things is an intrinsic part of contemporary being; a way of narrating ourselves through the presence *and* absence of consumer goods' (2007, 688; italics in original). Before deciding to get rid of possessions, people consider the stewardship of goods, or 'custodian behaviour' (Cherrier, 2010). They try to pass goods on to friends and/or relatives, hand them around to interested parties, or sell them, before contemplating the prospect of finally letting them enter the waste stream (Gregson, Metcalfe, and Crewe, 2007).

Waste in China

The confrontation with billowing amounts of solid waste is a fairly recent phenomenon in China. In pre-modern, Imperial days (until 1911-1912), superfluous goods were reappropriated and recycled endlessly until no more use could be found in or for them. In the Republican era (1912-1949) urban

configurations expanded, and with them the urgent need to discard waste materials for which there was no further use, and which were produced by and for the fast-growing urban population. Scavenging, gleaning, and other occupational endeavours emerged as activities that were successful in both recycling matter and absorbing the surplus labour power that spilled into cities from the countryside. Even so, the total amount of waste increased, although it still seemed manageable (Dong, 2003). During the first three decades of the PRC (1949-1979), the nation was very much in the process of rebuilding from over 50 years of internal conflicts and wars. Recycling was hailed as a patriotic activity, or even a revolutionary duty. Politicization of the act of recycling was used to mobilize the people to contribute much-needed resources to the reconstruction of the nation. Indeed, in many respects the Chinese situation was similar to the post-World War II situation of Hungary described by Zsuzsa Gille, in which 'planners and workers alike hailed all garbage and by-products as "free" materials to be mobilized for the fulfilment of the plan [...] [T]he state implemented a vast infrastructure that registered, collected, redistributed, and ordered the reuse of both production and consumer wastes' (2010: 1056).

This changed with the Reform and Opening Policy formulated by Deng Xiaoping in the 1980s. In the relatively short time since then, China has discarded its planned economy and developed what it calls 'socialism with Chinese characteristics': producing for the global market while at the same time attempting to satisfy the desires, wants, and needs of the population (Russo, 2012). Alessandro Russo credits Deng's decision with setting the trend of global 'neoliberalism' (2012: 271); the late Arif Dirlik termed this new phenomenon in China 'post-socialism' (1989: 364), while David Harvey proposed the terms 'state-orchestrated capitalism' or 'neoliberalism with Chinese characteristics' (2003: 153; 2005: 120). Deng's policy liberated Chinese consumers from only having access to the products that were churned out according to the overarching production plan. Instead, they were urged to consume in order to support the development and growth of the economy. They were also able to consume more, because wages rose significantly. Producers no longer needed to simply fulfil the quota spelled out in the Five Year Plans; instead, they had to compete for a share of the market and, to do so, they had to seduce potential customers. By consuming more products, Chinese consumers demonstrated their patriotism. In other words, consuming was not merely about satisfying individual desires and wants, but also about serving the nation.

In many respects, Chinese society has followed the trajectory laid out in the theoretical discussions referred to in the preceding section. Industrial

production turned into mass production of what consumers wanted, offering goods and services that were previously unavailable. The nation now faces solid waste disposal problems that are similar in many respects to those that other developing and developed nations in the world are grappling with. The urban infrastructure to deal with waste that was in place in the Maoist era has gradually been demolished, without alternatives being put in place or running. As various authors have established and made visible, China is now besieged by waste and threatens to be suffocated by it (Kao, 2011; Goldstein and others, 2011; Wang, 2011). It is an urgent problem: '[N]o other country has ever experienced the rapid growth in solid waste volume that China is facing now. The amount of refuse is growing annually by 8-10%, almost equal to the growth rate of GDP' (Zheng, Chen, and Craig, 2015: 67). The Chinese case is compelling because it is almost like a laboratory experiment that can be observed at a distance: at an incredible speed, the country is visibly experiencing a process that many other nations have also experienced or are currently experiencing, albeit at a slower speed and much more invisibly.

This study

This study focusses on the question of how China deals with waste. It is organized as a snapshot of the municipal solid waste (MSW) situation in one particular city in the People's Republic of China, i.e., Beijing, at the beginning of 2017. As the capital, Beijing is of course not China, and the city cannot be seen as representative of the nation as a whole. However, the policies and measures introduced in Beijing are monitored more closely than anywhere else in the country. As the capital, Beijing serves as a model for other cities to follow and often acts as a testing ground for new policies and approaches, with the result that the developments taking place there are analysed, described, and reported on more than developments in other Chinese urban areas. Thus, while keeping in mind that Beijing is or may be an exceptional case, the city forms a convenient research area. Moreover, the encroaching waste of Beijing has successfully placed the problems related to the final disposal of MSW visibly on the national agenda. Many other localities had been confronted by and trying to find solutions for MSW problems long before Beijing's waste siege became a topic of national interest, but they had failed to capture the attention of administrators, (environmental) non-governmental organizations (NGOs), or the domestic and foreign media.

The topics explored in the pages below do not focus on the technicalities of waste management processes. Rather, they are centred on the people who have to deal with waste that is not managed. China has expressed its intention to adopt the principles of the circular (closed loop) economy, yet the implementation of the legislative measures and policies involved in this decision encounters various problems of compliance at the lower levels of state organization. Per the adoption of the circular economy, the incineration of waste has been embraced as the ultimate solution for not only dealing with the waste itself, but also and more importantly producing and generating the amounts of energy (Waste to Energy, WtE) needed for continued economic development and growth while decreasing the burden on the environment. However, the process of burning the waste breaks the desired closed loop as potentially reusable resources are evaporated. Moreover, this 'incineration turn' is fiercely contested by some sections of Chinese society. The popular resistance to incineration seems unsuccessful and the attempts by already operating incinerators to neutralize fears of and suspicions about their operations fail. Successful incineration requires the careful sorting of waste. Newly emerging privately held recycling companies are increasingly taking part in the attempt to find solutions to this seemingly unsolvable problem. To make use of the preferential policy programmes formulated under the 'Internet Plus' plan launched in 2015, many of these companies have adopted an online-to-offline (O2O) strategy, supplementing their online presence with offline efforts. Has their emergence impacted urban residents? Indeed, how do residents dispose of their household garbage, and how and by whom is it collected? Some residents argue that O2O companies are merely new and more formalized manifestations of an informal waste collecting system that has existed almost without interruption through the ages. Migrant workers, who literally live on the margins of society, currently make up the main labour force of this informal system, and O2O companies see them as competitors. What do the waste pickers make of this turn of events? Various neighbourhood, municipal, and government institutions, as well as the O2O companies and environmental non-governmental organizations, have designed campaigns and programmes to inform and educate citizens and raise their awareness. The effectiveness of their efforts and those of the various environmental NGOs will also be scrutinized.

My work forms part of and was made financially possible through a broader project entitled Garbage Matters: a Comparative History of Waste in East Asia (financed by the Netherlands Organization for Scientific Research, project number 277-53-006), which sets out to examine waste as a social phenomenon in a number of contemporary East Asian nations (China,

Japan, South Korea, and Taiwan), and to explore the historical shifts behind the transformation of practices related to the 'production' and disposal of garbage since World War II.[1] In the East Asian countries under study, rising affluence, represented by growing levels of personal consumption, has played a critical role in this transformation. It has fuelled an endless expansion of the mass availability of consumer goods and has been accompanied by the overpowering encroachment by the waste generated by the food-processing and packaging industries. These and other developments have contributed to a metamorphosis of the daily practices of shopping and housework, as the culture of scarcity and the ethos of frugality have gradually given way to consumption-for-status and the veneration of material comfort and convenience (Strasser, 2003).

Data Collection and Constraints

A large part of the data that have been used in writing these chapters was collected during a period of intense fieldwork in Beijing during March-May 2017. Many of the impressions related to waste management and the informal sector of garbage pickers gained in that specific period expanded on earlier observations made during my very first visit to the city in 1980 and the many subsequent ones. I find it a treat to walk the streets and observe the daily behaviour of Beijingers; having a specific focus when observing them is even more rewarding. To be honest, however, my long-time interest in these topics cannot match the almost total immersion in the Chinese world of garbage of Joshua Goldstein, who has made it into the focus of his academic work (Goldstein, 2006; Hedrick, 2016), or Adam Minter's familiarity with the junk trade (2013a, 2013b, 2015). During my roaming through Beijing's neighbourhoods, I have been able to observe and compare the waste-related practices of the people of various districts of the city, ranging from those living in the sophisticated and intellectual Haidian and the sprawling and busy Chaoyang – the two districts where I have spent most of my time over the years – to the residents of Dongcheng, Xicheng, Shunyi, Changping, Fengtai, Tongzhou, and Shijingshan. When you hang out on street corners or near waste collection depots, it is almost natural to strike up a conversation with the other people hanging out there. Wherever I could, I engaged in conversations with as many people as possible, simply talking about their own attitudes and behaviours that touched upon waste and recycling.

1 https://www.garbagemattersproject.com/

Although such talk can hardly be called interviews, since they lack formality and a prepared questionnaire, they were very illuminating and often served as point of departure for more questions and, where necessary, alternative approaches to potential sources of information.

With the assistance and cooperation of the Department of Sociology of Peking University, in particular that of Professor and Associate Chair Liu Neng, I have been able to conduct a number of formal interviews, some 30 in all. My respondents were from different strata of society and included academics; residents of communities; representatives of non-governmental organizations (Green Beagle/Darwin Institute, Friends of Nature Beijing, Huan You Science and Technology, and Hong Chao); regular sanitation workers, waste collectors, and waste collection point bosses; and officials in the municipal administration at various levels. My plans to interview representatives of the O2O recycling start-ups unfortunately fell through. I have also had the opportunity to visit a number of waste collection points and the Gao'antun incinerator facility to witness their operations.

As Wu and Zhang have convincingly demonstrated in their groundbreaking study of 'garbage lives' in Beijing waste communities (2016), as well as many other studies (e.g., Van Rooij, 2012), the relatively short period of time I was able to allocate for research was not enough to win the trust of potential sources, particularly migrant workers. Chinese society is famously said to lack trust and to be implicitly suspicious of outsiders (Fukuyama, 1995; Tu et al., 2011). Shunned by civilized urban society and living an existence marked by precarity, migrant waste pickers tend to be even warier of any type of contact, keeping to themselves as much as possible. Winning their trust is one problem; being a foreigner and trying to win their trust enough that they will agree to become an informant is an even more complicated one, particularly when the foreigner does not have anything to offer in return (Ou, 2011). At a time when the Chinese government has whipped up an atmosphere of distrust towards foreigners by suggesting that they are all spies intent on defaming the country and/or stealing its secrets, being a foreigner made many potential sources suspicious and fall silent, all the more because they were already living on the margins (Brazil, 2018). Nonetheless, my attempts to shoot the breeze with ordinary Beijingers were relatively successful, although talking about trash turned out to be much more complicated.

The political climate as it has emerged since Xi Jinping's accession to power in 2012, with its suspicions and prosecution of corrupt behaviour and ideological non-conformity among officials and non-officials alike,

has created a general fear of taking the initiative, of being seen as taking chances that others within the administrative and political hierarchies might find fault with. This was particularly noticeable when I attempted to reach out to the O2O companies that I had intended to be the centrepiece of this research project: Incom, Taoqibao, and Zaishenghuo. Despite formal letters of introduction from Peking University and other strategies to try and contact with these companies, not one was willing to be interviewed, stating that it was inconvenient for them. Among the reasons given for this unwillingness were the Two Meetings (Lianghui) sessions that convened in March 2017; the Belt and Road Forum (April 2017); and other events of an official and political nature. National events like Party meetings usually generate a tense atmosphere in the city, which is combined with increased surveillance and (visible and invisible) police presence. In spring 2017 Beijing was tenser than I had before experienced, with surprise ID-card inspections in the subways and other surveillance activities. The information collected through the interviews that I was able to conduct has been augmented with data and insights from an extensive and broad literature study on solid waste management, waste picking, urban development, precarity, etc., as well as topics more broadly related to Chinese society and politics.

Although Beijing's waste problems have been and continue to be researched by many others, until now most research has focused on the quantitative aspects of waste generation and the various methods of disposal that have been in place in various locations at various times (e.g., Dorn, Flamme and Nelles, 2010; Linzner and Salhofer, 2014). While a deep knowledge of these processes is essential, in my opinion serious engagement with the human factor of waste generation and disposal has largely been missing. What do ordinary people actually think about the waste they generate and the problems it creates for the city? How are their behavioural considerations influenced by rules and practices on a daily basis? Enquiries into the attitudes of those citizens who participate in demonstrations against incinerator plants and other acts of Not-In-My-Back-Yard (NIMBY) defiance (Johnson, 2013b; Wong, 2016; and others) have been published regularly in recent years, but this scholarly interest appears to be stoked more by the potentially subversive aspects of these civic actions than their underlying environmental causes or motivations. The voice of the ordinary person in the street continues to be rarely heard. In this study, I want to give this ordinary person a voice and hear where s/he stands. What are residents' attitudes towards their own polluting behaviour and what are their ideas about and expectations of waste management in the present and foreseeable future?

Structure of the study

In Chapter 1, I provide a sketch of how China, where 'everything was constantly recycled in a culture of thrift and poverty' (Dikötter, 2006: 14), particularly Beijing, evolved into its present state of overflowing waste. I look at the shrinking of state participation in dealing with waste and the emergence of an army of informal waste collectors that has been recruited or emerged from among the migrant workers who have moved to the cities. While the latter's contribution to waste management cannot be denied, their existence is hardly ever acknowledged in official sources, at least in a positive sense, and their ability to operate has been and continues to be made increasingly difficult. The chapter closes with an overview of the severity of the current waste situation, discussing the problem of collecting relevant and workable statics and arriving at an analysis of whether the situation is as serious as many sources suggest.

Chapter 2 discusses the desire to create a circular economy in China, as officially expressed by the government, noting that structural initiatives to bring this about are few and hard to find. Just as in many other countries, the Chinese government sees incineration as the most logical and most effective way forward (McKinsey & Company and Ocean Conservancy, 2015). On the one hand, incineration solves the problem of ever-growing amounts of waste in one fell sweep; on the other, burning garbage produces energy (WtE) that can be used for a variety of purposes. On a more symbolic level, the embrace of incineration technology shows the rest of the world how modern, developed, and evolved China is. Here, I also analyse why the state encounters so many problems in making people comply with its rules and regulations. Particularly relevant for the circular economy is the 'Internet Plus' initiative (State Council, 2015b) proposed by Premier Li Keqiang. Under 'Internet Plus', efforts were focused to 'integrate the mobile Internet, cloud computing, big data, and the Internet of Things with modern manufacturing, to encourage the healthy development of e-commerce, industrial networks, and Internet banking, and to guide Internet-based companies to increase their presence in the international market' (State Council, 2015b). 'Internet Plus' gave birth to the sharing economy (Lan et al., 2017), and allowed for the emergence of 'Internet Plus Recycle'. Under this heading, a number of garbage and recycling companies have made an appearance to fill the gap left by the disappearance of the recycling structure run by the government. Their defining characteristic is that they combine on-line and off-line (O2O) activities (Guo, 2016; Zhang, 2016), adding a contemporary twist to the centuries-old profession of recycling. Apart from offering to collect the

garbage and recyclables from people's homes, many of these O2O-companies have branched out into other fields, such as offering small repairs and home refurbishing services (i.e., painting, electricity work). Where do O2O companies like Incom, Taoqibao, and Zaishenghuo fit in the stream of waste and its disposal? Do they recycle the waste they have collected themselves, or do they serve as middlemen? And why have they branched out to offer various other services, in effect becoming employers for part-time workers? Where do these companies acquire a workforce for jobs that are not related to garbage? Do they collaborate with urban employment bureaus or recruit on street corners? What does becoming an employee of such a company actually mean? Is it just about joining a work unit and wearing a uniform, or does it imply more, on a subconscious level? Does it give migrant workers an opportunity to become accepted members of the urban community? What influences, if any, are the activities of these companies having on the social fabric of Beijing? On the basis of my findings, I am forced to conclude that these various 'Internet Plus' initiatives that were hailed as the ultimate solution to the waste problem, have not realized their stated goals and may in fact have only served as a form of fashionable window-dressing through which to gain access to government subsidies and support.

Chapter 3 looks at Chinese urban residents, i.e., the people who produce garbage. I analyse the willingness of a number of people to classify and separate their garbage, and establish that awareness of the waste problem is not always matched with actual individual behaviour that seeks to contribute to a solution. Where do urban residents stand when it comes to dealing with the waste they produce? Are they aware that their ever-increasing consumption exacerbates the problem of waste disposal? Are they inclined to support the principles of the circular economy, and will they actually start to reduce, reuse, and recycle as much as they can? What are their ideas about the garbage retrieval services offered by the new O2O companies, and do they make use of them? It seems that the apparent failure of these net-based operators has further contributed to a broadly shared feeling of frustration among citizens concerning the government's handling of the waste situation. Many people want to actively contribute to improving the environment, but see no options by which they can put their energy to effective use. Are those willing to do so more in favour of solutions like waste incineration or are they becoming environmental warriors, mobilizing through civic action against secondary pollution and other potentially dangerous by-products? If they adopt a position that is more activist in nature, do they merely display NIMBY behaviour or are they seriously engaged in trying to find alternatives to improve the environment?

In Chapter 4, my focus is on the other side of the coin: the waste collectors. Before Beijing's waste is transported to the steadily decreasing number of landfills or increasing number of incinerator facilities on the outskirts of the city, it is painstakingly sorted for anything that might be valuable, which is taken out of the waste stream and sold. The people sorting through other people's garbage tend to be members of the vast army of migrant workers; in the process, they reduce the total amount of waste by 17-38 percent (Linzner and Salhofer, 2014: 905). Many of these migrant workers initially started working in the building trade, but once the scope and speed of construction work slowed down, they have become active as waste pickers, PET bottle collectors, or recyclers of other resources and raw materials. As Wu and Zhang (2016) have noted, this is not because they are unable to find alternative employment; rather, it is a conscious choice based on informality, independence, and a reasonable income. Due to developments beyond their control, the value of the recyclables they collect and sell is under pressure. With global oil prices dropping, it has become cheaper to produce new, fresh plastics and PET than recycle used materials for new resources. The Beijing municipal government continues to throw obstacles in their path, harassing them while they do their waste-picking work, pushing them further and further out of the city proper, and closing down their communities and workspaces. Moreover, the emergence of O2O companies may have changed the work conditions for such informal labourers. Because these companies display an organization, structure, and sense of sophistication that unorganized labourers lack, they appeal more to the administration. O2O companies try to offset the competition from the informal sector by co-opting it. But do the waste pickers consider employment by one of these companies and actually becoming an 'official' (or at least, a formally employed, officially recognized) garbage picker to be worth their while? Do they care whether such employment might be an option by which they could gain social capital (Prasad et al., 2012)? Is there competition between the pickers who have been co-opted by the O2O companies and the 'freelancers' who are still active, or between the garbage pickers from different companies who fight for access to the same recyclables? Does this new way of collecting recyclables have any influence on the often-witnessed, often-reported personal connections that have emerged over time between garbage-offering residents and garbage pickers (Prasad et al., 2012; Minter, 2013a, 2013b, 2015; Wu and Zhang, 2016)? In late 2017, the Beijing municipal government and others have started a number of concerted campaigns to drive out migrant workers and force them to return to the rural places from which they originate. What does

this mean for the garbage collection, retrieval, and recycling sector? Or, to put it differently, who will take care of sorting the recyclables from the urban garbage if the informal collectors gradually return or are forced to return to the countryside?

Chapter 5 analyses the educational processes related to acquiring a recycling consciousness. People need to be informed of the problems involved in waste management. This includes not only being made aware of the need to produce less garbage, but also about less harmful ways to dispose of waste once it is generated. This calls for continuous educational efforts related to the need for garbage classification and separation, ways to reduce waste, etc. In the past ten to fifteen years, a socially acceptable and responsible attitude towards waste and garbage disposal has increasingly become widely associated with the concept of having *suzhi* ('human quality'). *Suzhi* is a marker with which one can define oneself or one's group in relation to others. One can learn or acquire *suzhi*, but it is essentially a quality that one is born with. With this concept of *suzhi*, urbanites set themselves apart from others, including the migrant workers who collect their waste. Yet the perception of having or lacking *suzhi* also plays a role when evaluating the behaviour of people from one's own social circle when it comes to garbage classification and separation. What educational projects on waste, garbage classification, and separation have been developed, where were they employed, and what results did they have? What means and media have been the most effective in bringing about changes in behaviours and attitudes (i.e., print media, public service announcements, special television programming)? Are small-scale local events more effective? How effective are regular educational postings on social media sites by the O2O recycling companies in changing behaviour? Who develops, designs, and produces these postings?

Chapter 6 looks at the work of NGOs and other voluntary environmental groups. Voluntary environmental organizations are very active when it comes to raising the consciousness of the population concerning garbage disposal, garbage separation, and the benefits these activities have for improving the living environment. Organizations such as Greenpeace International, Friends of Nature, Green Beagle/Darwin Institute, and many others are taking the lead in urban China in this respect. Yet non-governmental organizations (NGOs) in general, and even environmental NGOs (ENGOs), have to fight a battle on two fronts. In addition to their educational and activist work, they face stiff political and government obstruction to be able to be active in the first place. In the Xi Jinping era, the playing field for ENGOs has been reduced even further (Kostka and Zhang, 2018). The Chinese party-state generally considers organizational forms like NGOs to be a threat to its

existence; in the best-case scenario, the government will confer on them a consultative role, or use them to reach certain parts of the population. Although this makes NGO work difficult in China, it is not impossible (Lu, 2007; Salmenkari, 2008; Wu and Chan, 2012). ENGOs are very active in a wide variety of environmental and garbage disposal-related initiatives and are able to draw on large numbers of volunteers from among school pupils, university students, and others. At the same time, ENGOs are very concerned about maintaining good relations with the government. As a result, they tend to shy away from actively supporting citizens' protests, whether they have a NIMBY character or otherwise. On the whole, the hands of Chinese ENGOs seem to be tied. While they have sprung into existence to give a voice to those among the population who are concerned about the way things are being done, make the people more aware, and improve environmental conditions, many residents remain under the impression that ENGOs are more interested in creating a united front with the government and improving the standing or status of the organization or its executives than in siding openly with citizens' demands, of whatever type. Yet it is only by adopting these strategies that ENGOs are able to circumvent the stringent regulations (Ho, 2007). In addition, green activists make avid use of informal networking with Party and state officials as well as with environmental scientists to raise the impact and effectiveness of their initiatives. What do NGOs concretely bring to the table, then? How can they deploy strategies that satisfy both the government and those that live in China's closely controlled civil society?

Chapter 7 discusses the politics of waste incineration. The people of Beijing seem to be generally positive about the possibilities of incinerator technology, particularly when that technology is imported from abroad, as is often but not always the case. Companies from Japan, Germany, France, Switzerland, and other countries have sold and transferred technology; Chinese incinerator designers include the Shenzhen-based Everbright Environment Co. Ltd and the New Century Energy and Environmental Protection Co. from Hangzhou (Chin, 2011). At the same time, there are deep-seated feelings of distrust towards the regulatory process that guides incineration, and towards the recycling factory managers and incinerator officials that are presently responsible for the plants. This distrust is largely based on incidents that have taken place in the recent past, leading to widely circulating and generally believed rumours about a lack of safety and the incompetence, corruption, and malfeasance of the officials. Some incinerator plants, including the Gao'antun Plant in Beijing, have developed a very open and above-board way of encountering the complaints, fears,

concerns, and protests from the people living in their vicinity: they try to allay suspicions by opening their doors, making the processes taking place in their plants as visible as possible, creating the impression that they take the fears and complaints of people living in the neighbourhood seriously, organizing various neighbourhood activities, etc. Yet the suspicions and fears about the plants remain. Many citizens continue to see the activities organized by the incinerator facilities as simple attempts at whitewashing or hiding the true nature of what is happening inside the plants. Opposition to incineration plants and to the construction of other potentially polluting and environmentally hazardous factories such as PX (paraxylene) plants continues to exist, but actions and protests generally do not evolve beyond the NIMBY (Not-In-My-Back-Yard) level (Lee and Ho, 2014; Steinhardt and Wu, 2015; Zhu, 2017; Bondes and Johnson, 2017): people are mainly concerned about events taking place in their own neighbourhoods and do not really care about what happens in others, and there is no principled opposition or resistance against incineration as such (i.e., Not-In-Anybody's-Back-Yard). Is incineration the only way forward, or does it only solve part of the problem for Beijing? What is the state of the debate in Beijing and what is the level of public resistance? How has the construction of incineration facilities progressed, and has it contributed to the alleviation of the problem(s) caused by surplus garbage creation?

In the final chapter, I sum up my observations, provide recommendations, and identify venues and topics for future research.

Acknowledgements

This work would not have seen the light of day without the support and help of Ms. Xiao Boyu and Mr. Liu Yongbo, two promising graduates from the Sociology Department of PKU who went out of their way to act as my research assistants in 2015 and 2017, respectively. My 'laobaixing' friends of many years, which include Ms. Jiang Ping, Chen Yueming, Dai Jinquan, Xu Dashan, Tong Yue, Hao Peimin, Ms. Tang Ying, Ms. Shi Guizhi, Wu Erli, Li Yongqing, Ms. Yang Wei, Li Wei, Wu Yueli, and Zheng Shilin, opened the doors to the lives of 'ordinary' people for me, and allowed me to gain the perspective of the 'Beijinger', in so far as such a person actually exists.

Many friends and colleagues from academia went out of their way to help me gain access to information, sources, and informants, and/or to see things the correct way. They include Prof. Liu Neng (PKU), Prof. Ding Junjie (CUC), Prof. Liu Linqing (CUC), Prof. Wu Yongping (Tsinghua), Prof. Huang

Shengmin (CUC), Dr. Lin Hui (CUC), Dr. Hu Bo (CASS), Dr. Wang Yuqing (independent scholar), Ms. Mary Huang (PKU), Ou Ning (independent scholar), Dr. Yang Qingqing (MUC), Liu Chang (independent scholar), Prof. Wu Jing (PKU), Guan Shaoming (PKU), Liu Xinwei (Guangming ribao), Prof. Yuan Peng (CASS), Prof. Liu Jun (BFI), Prof. Zeng Guohua (CASS), Ms. Pang Yaran (PKU), Huang Tao (PKU), Liu Zhengnan, and many others.

Among other Beijing friends who have helped me out along the way over the years, Huang Hui, Dong Zhongchao, Ms. Xie Ying, Ms. Wu Min, Liu Yong, He Changhai, Cui Xinwei, Yang Shaoping, Guo Lei, Hu Dehua, Zhang Boyi, Cui Baodong, Luo Qilong, and Cheng Baogui surely must be mentioned.

The research for this publication took place under the auspices of the Garbage Matters: a Comparative History of Waste in East Asia Project, financed by the Netherlands Organization for Scientific Research, project number 277-53-006. I am grateful to the project leader, Prof. Katarzyna J. Cwiertka, for inviting me to take on the research of the China situation; and I am indebted to the other researchers involved in the project, Ms. Olivia Dung, Ms. Hyojin Pak, and Ms. Rebecca Tompkins, as well as Prof. Anne Murcott, for stimulating discussions and insights, and great dinner conversations.