

## Histories, Trajectories and Patterns of Cleanliness, Energy and Water Consumption: Reflections on China

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### Abstract

China has facilitated and witnessed the growth of one of the world's largest economies, and through its focus on production these past decades has amassed an energy footprint that is one of the largest in the world. While household energy and water consumption has been steadily rising in China, per capita consumption rates remain much lower than within European and other Western contexts. However, this energy and water demand is, and is projected to continue, rising rapidly particularly in urban areas. One important aspect of the increasing demand of water and energy is the dynamic social and material landscape of cities, regions and households which are influencing mundane everyday practices such as laundry, and personal bathing. Unlike Western countries inequities between the rural and urban poor and 'the rest' of Chinese society are becoming increasingly more pronounced as the economy develops, influencing the patterns of production and provision, and the sustainability of various mundane everyday practices. Alongside the transformations of material infrastructures of cities and households are a changing set of expectations – for example in regards to expectations of cleanliness and comfort – as well as changing sets of practices related to cleanliness in everyday lives. This has been supported by the development of a concept of public health called *weisheng* throughout the early twentieth century which ties the building of the nation state to a biopolitical, and particularly Chinese, understanding of the healthy body, hygiene, and public health. This is expressed in contemporary China in various multiple, hybrid hygienic modernities across Chinese urban spaces. This paper provides a brief account of the histories, trajectories and patterns of water using practices related to personal bathing, laundry and cleanliness in China. It reflects upon a literature review that explores the dynamics of changing social and material urban landscapes in China. It also is a call for people interested in research on DEMAND to not just apply conceptual understandings of practice and change to the Global South, but to develop nuanced, geographically bounded ideas of practice and sustainability that connect to the multiple local realities, and social, material and political dynamics.

## **Introduction: Energy and Water Consumption in China**

Practices related to the nexus of household water and energy consumption in China are 'on the move' due to large scale regional transformations, and changing economic, social and cultural contexts (Hubacek et al., 2009). Examples of these dynamics include: rural to urban migration; public to private provisioning of resource services; increased inequalities between rich and poor within and across regions; and rapid urbanisation. Energy consumption in China has been shown to increase with economic growth and urban transformation (Shouxian et al., 2014). Domestic water and energy consumption in China is expected to at least double by 2020 (China, 2013, Finlayson et al., 2013, Jiang, 2009, Seckler et al., 1999, UNDP (United Nations Development Program) and CASS (Institute for Urban and Environmental Studies Chinese Academy of Social Sciences), 2013). This is partly explained by changes to provisioning and practices to heat water for clothes and dish washing, personal hygiene and cooking (Plappally and Lienhard, 2012).

Existing research in China on energy and water demand retreats into a familiar focus on changing behaviour through individual motivational factors alone (such as conservation attitudes of urban householders, willingness to pay, price signalling and consumer choice) (Chang, 2013, Wang et al., 2008). Growth in consumption will likely outpace any gains made from technological innovation (Midden et al., 2007). There is currently little engagement with contemporary geographical, sociological and social science perspectives that address the underlying influences of hygiene, cleanliness, health and comfort on water and energy use in a Chinese context. Understanding how broad infrastructural change such as urban regeneration, socially shared norms and meanings, national political projects, and the politics of water/energy supply and demand co-evolve and change household/communal practices is little developed in the literature.

### *Why focus on everyday practices, urban transformation and hygiene in China?*

The purpose of this think piece is to begin to connect the research dialogue on household energy and water demand in the Global North, and the research in China on urban transformation with the limited research on changing practices of laundry, personal bathing and hygiene in China. Similarly to research on 'demand' and 'behaviour change' in the Global North, the literature on water and energy use in China tends to sit relatively separately from any research on the socio-materialities underpinning hygiene, cleanliness and practice. Where the literature does intersect with social and cultural theory - for example drawing on social practice theory to develop understandings of laundry (Lin and Iyer, 2007) - it is done relatively simplistically.

This paper argues that there is a need to develop theoretical and empirical projects around everyday practice, consumption and energy/water sustainability in China in a way that is sensitive to various scales of politics and practices of consumption in these local and regional contexts. It is argued that it is not enough to apply existing approaches such as social practice theories which have largely been developed in Europe and the Global North to understanding mundane consumption in these contexts. This follows critiques, and constructive projects, to generate urban theory beyond the West (Edensor and Jayne, 2012). In this paper I am less interested in using "China" as an empirical project to extend

social practice theory. Rather the curiosity is how we can use the sensitivities and histories of research on cleanliness and consumption connected to such Western theoretical traditions (Shove, 2003, Taylor and Trentmann, 2011, Pullinger et al., 2013, Davies and Doyle, 2015, Kuijer, 2014, Browne, in press) to begin developing a Chinese-centric view of the co-evolution of materiality, social meanings, and performativity of practices in urban spaces in China. Such a conceptual and empirical project it is argued will enable greater sensitivity to the local hybridities of hygiene and sanitation projects (Dombroski, 2015), and how they connect to ideas of sustainability and change in those contexts.

This is significant as an analysis of water consumption in China (and other countries such as India) through archival research (Browne et al., under review, Browne et al., 2014) enabled us to access how issues such as equity, equality, gender, and justice (to economies and infrastructures) were influencing social and material changes to mundane everyday consumption. Similarly, there were strong reflections on changes to collective consumption (such as shared ownership) and the sociality of practices taken for granted in the Global North to be 'private' practices. Also of interest was the development of ideas related to hygiene and the nation state which are in vast contrast to the social meanings developed within the Global North around hygiene. It is to these issues that this think piece briefly turns.

#### *(Sustainable) development, consumption and changing everyday lives in China*

In the past decades China has witnessed unprecedented economic, social and environmental transformations - particularly in regards to the urban landscape – which has fundamentally altered the provision and use of water and energy resources. The nexus of water and energy resource provision, use and sustainability continues to be altered by various social and spatial politics – from the recent reinstatement of Confucian moralities of frugality and curbing waste through Chinese policy (Browne et al., 2016); the rise of Chinese sustainable consumption policy agendas and post-2015 implementation of the Sustainable Development Goals; through to low carbon transition projects and the rise of Chinese 'eco' and 'smart' cities. Post-development research highlights how current development discourses obscure the diverse, hybrid, place-based realities of everyday practice and resource consumption in China (Dombroski, 2015, Iossifova, 2015a), with eco- and smart-city projects in China perpetuating variegated urban sustainability (Chang and Sheppard, 2013), and a technological and consumer-commodity focused approach to transition (Zhuang, 2015, Weisz and Steinberger, 2010). Consumption research is also limited in China with its strong focus on conspicuous (Podoshen et al., 2010) and ethical (Zhongzhi, 2001, Zhongzhi, 2006) consumption, and only a small amount of historical work related to frugality and consumption (Zanasi, 2015). Research on 'households' from a geographical perspective tends to be from a more generic 'Asian' perspective (Brickell and Yeoh, 2014), as opposed to creating geographical specificity in understanding urban, household, and practice transition within specific national or regional contexts.

The geographical and allied social science literatures make few explicit considerations to sustainable consumption in China in its more mundane forms. Understanding not just the material, technological and infrastructural, but also the social and embodied transformations of everyday practices (e.g., laundry, personal hygiene) that influence finite

water and energy resource use is essential if the targets within Chinese economic and environmental policy are to be realised. While the significance of mundane everyday practices to sustainability transitions has been a strong focus of research in the Global North (Browne, 2015, Shove, 2010, Strengers and Maller, 2015), in the Global South and particularly China these interactions remain drastically under researched. Research taking an embodied approach to Chinese urbanism (Jayne and Leung, 2014) and extending it to consider issues of sustainability, would enable deeper exploration of diversities of local practices, and the co-evolution of the material and the social. Arguably such research would enable a more comprehensive picture of the dynamics of the water and energy nexus, and how resources move in, through and are transformed by everyday lives. However, given this is an area of research I am just beginning to develop, and in the absence of real 'data', I will consider these issues through a variety archival research and literatures.

### **Changing Landscapes of Cleanliness in China**

As the material infrastructures of cities are transformed and new cities created in China, there is increased access to reliable energy and water infrastructure. This is playing an important role in shaping practices related to hygiene of clothes and bodies. For example previous research has shown how increased access to reliable energy and water provisioning has increased the purchase of washing machines particularly for urban Chinese people (Rong and Yao, 2003). However, such access to hygiene and sanitation services are not necessarily equitable or experience evenly even within urban contexts. For example, sanitation provision is developing unevenly as a result of urban development in Shanghai leading to unequal sanitation outcomes particularly for low-income – often migrant - urban workers (Iossifova, 2015a, Iossifova, 2015b). While such disparities and enclaves exist within cities (Davis, 2005), there is also a strong focus in the literature on the rural-urban divide related to income, wealth and well-being disparities across China (Li and Wei, 2010, Kanbur and Zhang, 2005). In relation to laundry for example, about 95% of urban families and only 40% of rural families in China now have their own washing machines (Lin and Iyer, 2007)

Such wealth and geographical disparities combine with differential provision of secure, consistent water and energy supplies to shape technological adoption, and practice based change. The following example explores the practices of laundry and agricultural work, income generation, and household labour around food through the one technology of the washing machine. It is also an interesting example of the unevenness in the purchase and use of technology across China, and how technologies are often appropriated in unexpected ways, as they are often put to use solve multiple local problems. The Haier Group Co, which is the leading home-appliances manufacturer in China realised that many of its customers (particularly the rural poor) used the washing machines that they had bought not just for washing clothes, but also washing vegetables (Anderson and Markides, 2007)!<sup>1</sup> This is because the purchase of a washing machine that just washed clothes was seen as frivolous, and that technology needed to serve multiple purposes to be a worthwhile investment for these rural consumers. The technology was being used in unexpected ways through processes of appropriation to deal with issues and concerns at the local level. Anderson and

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<sup>1</sup> Anecdotal evidence from a Japanese colleague at the SCI reveals the washing machine is also often used in Japan for the cleaning/preparing of squid!

Markides reflected that Haier Group had recognised the local needs for multipurpose technologies and altered their existing designs to enhance the performance of vegetable washing in their washing machine. The Haier Group also modified existing washing machines so they wouldn't clog with vegetable peels, and they also developed another washing machine that enabled the consumer to make goats milk cheese in the washing machine drum (Anderson and Markides, 2007). In contexts of greater income disparity, technologies or products such as the washing machine were seen to need to contribute to multiple aspects of consumers lives (beyond just their originally conceived purpose) and solve these local problems and concerns, including aspects of the micro-coordination of everyday life.

The material changes occurring in Chinese cities reflects not only changes to the design of technologies and resultant practices in domestic space, but also reflect the widespread reconfiguration of communal provisioning of bathing and laundry infrastructures, linked to broader processes of urban regeneration and change. That is, the changes to the material fabrics of cities, is pushing services such as laundry (and vegetable washing!) inside the home. This is not just changing the material fabric of cities and where services such as laundry and personal hygiene are provisioned but the sociality of these practices.

Proctor-Zu, reflecting on the mock-umentary 'Shower' from 1999, described how "dramatic transformations in urban space are reshaping everyday life in cities all over China" (Proctor-Zu, 2006, p. 163). And yet how such transformations are influencing the trajectories of resource consumption tied to everyday practices is rarely researched within a Chinese research context. He reflected upon the disappearance of communal bathing as the hutongs<sup>2</sup> in which communal bathing occurred are replaced with multi-storey apartments with private bathrooms and commercial 'public' bathing spaces. This is not to say the communal bathroom/wash house/toilet has completely disappeared; in some parts of China it is still part of everyday life, particularly in poor urban enclaves, and rural areas. However, the widespread transformation of cities and urban planning, and the changing material fabrics of housing provision (Duanfang, 2011), is not just an evolution of the materiality underpinning hygiene provision but of sociality of hygiene and cleanliness in these Chinese cities. The issues of mobility, leisure, socialisation and the locations of public and private lives are particularly illustrative for the example of bathing and showering in the Global South. Historically, bathing in Japan, India, China were – and often still are - part of the practices of socialisation, of friendship, and of collective public life (Clark, 1994, Srinivas, 2002, Hosagrahar, 2011); as opposed to sanitation which often is associated with negatively entrenching social, economic and gendered inequities (Srinivas, 2002, Jewitt, 2011, Iossifova, 2015b).

### **'Weisheng', Hygiene and the Chinese Nation State**

In China the term '*weisheng*' - throughout the twentieth century at least – has been the direct translation for the term hygiene. However, this concept is focused on 'maintaining and nurturing life' which is very different from the microbe/germ focus of Western approaches to hygiene. This concept of *weisheng* incorporated not just the cleanliness of

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<sup>2</sup> Traditional narrow alleyway neighbourhoods that consist of compounds of houses

the body alone, but also choice of food, exercise, ventilation of buildings and exposure to sunlight and fresh air (Lei, 2009). Reforms to personal hygiene were seen to be a substantial part of the nationalist project of the 20<sup>th</sup> Century in creating new people, and new life. The concepts encompassed by the term *weisheng* morphed from an understanding of the practices of guarding life to an approach to health dictated by the scientific laboratory and state apparatus, supporting the development of a new hygienic modernity in China (Rogaski, 2004). That is, focusing on the individual and the transformation of their personal habits in a mass movement – that is a movement from ‘individual hygiene’ to ‘public health’ - was seen as a nation building exercise to connect people to each other and the state, to public ethics and common interests through hygiene (Lei, 2009, Rogaski, 2010). The individual body, therefore, became part of the collective, national project of resisting western imperialism through the broader project of public health.

In this way changes to the practices of individuals or families underpinning sanitation, hygiene and cleanliness can reflect broader existing, and evolving, social and cultural meanings regarding hygiene, purity, and cleanliness. Dombroski for example explores how infant toileting practices<sup>3</sup> in China are reflective of the principles of ‘guarding life’ (*weisheng*) not ‘ridding of germs’ (Dombroski, 2012). Despite injections of Western notions of hygiene – for example through globalised brands selling baby nappies/diapers – particularly Chinese hybrid hygienic modernities exist in the practices of child toileting. The way these hygienic modernities shaped everyday practices can also be observed in the example by Lin when she describes the emergence of a ‘science of hygiene’ (*weisheng zhi xue*) in republican China. This new *weisheng zhi xue* could be observed through the increased governance of the female, reproductive and menstruating body. And yet Lin also observes hybridity in these hygiene realities as these new ideas of *weisheng zhi xue* blended with western science (and brand advertising), traditional Chinese medicine and indigenous, local customs (Lin, 2013).

In the Global North sweat is an often smelly and shameful bodily substance that pushes many people into showering, and doing laundry and other forms of bodily management (Pullinger et al., 2013, Browne, in press, Waitt, 2014, Waitt and Stanes, 2015). However in China people have a very different relationship to sweat on bodies and clothes. For example, while there are great increases in the purchase of underarm deodorants in China, it is still one of the most underdeveloped deodorant market in the worlds (Mintel, 2012). This is said to be due largely Chinese consumers perspectives on sweating (that is that sweating is good for health and should not be stopped), and that there is a great emphasis on smell and odour in clothes than the body (Mintel, 2012). While corporations such as Unilever (whom Browne works with on a range of projects) and Mintel (a market research company) hold such data, these relationships between cultural understandings and practices of bodies, clothes and cleanliness are little addressed in the literatures on water and energy demand. And yet changes to such practices across a population level – along with technological adoption and other material changes to homes and cities - potentially underpin the drastic rise of household water and energy demand in urban Chinese areas.

These evolving bodily practices also connect the practices of individuals to broader changes at the level of regional or nation states. As Sigley (Sigley, 2009) explores ‘*weisheng*’ in the

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<sup>3</sup> In China babies and toddlers have historically not worn nappies, instead wearing ‘split pants’ so parents can toilet children through elimination control – at home and in public - from early infancy.

early twentieth century relates to the emergence of a particularly Chinese form of biopolitics<sup>4</sup> (Farquhar and Qicheng, 2005, Foucault and Burchell, 2008). The relationship between these big projects of the nation state related to hygiene, the urban and spatial transformations of cities, and the (sustainability) of everyday life and embodied cleanliness practices has yet to be explored in detail within the literatures, particularly in a contemporary Chinese context. As the Sustainable Development Goals, and the Chinese economic and environmental policies on sustainable consumption, push ideas of the green consumer and technological efficiency as one lynchpin in low carbon, sustainability transitions, understanding these underlying biopolitical, social, and material dynamics is essential.

### **Conclusion: Practice Theories Beyond the West**

This thought piece represents a first attempt at connecting the practices of individuals going about practices of cleanliness related to their bodies, clothes, and homes with macro processes of political, cultural, infrastructural and economic development and resource sustainability across various periods of Chinese history. The co-evolution of material infrastructures (e.g., buildings, technologies, and product lines), cultural patterns and social structures (e.g., gender, caste, socio-economic status), as well as broader connections of social values with the ideologies of the nation state (e.g., *weisheng*, hygienic modernity) is an important future sphere of research particularly when exploring the nexus of energy and water demand in China. As shown through the discussion of *weisheng* above, there is perhaps a need to consider the biopolitics in landscapes of health and hygiene in China in more explicit ways than has currently been addressed in theoretical traditions of DEMAND, and various theories of practice. Arguably this is because the social and economic inequities embedded in uneven infrastructures and multiple hygienic modernities as China develops its water and energy infrastructures highlights more explicitly ideas of the governable body, and related issues of class, gender, economics, politics, and bodies than research on energy and water demand in the Global North (see also: Bouzarovski and Petrova, 2015, Smits, 2015). In essence this think piece is a call for greater consideration within water and energy demand research – particularly that derived from a social practice theory perspectives – to engage with conceptual and empirical developments within the Global South; to consider the local geographies of practice and how these are evolving in ways that are influencing sustainability; and how we can conceptualise and mobilise change beyond the lessons on sustainable consumption research and policy so far learnt in the Global North.

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<sup>4</sup> The expression of political power of the nation state to all aspects of human life – the governance of and through the body – takes form in the Foucauldian term biopolitics (Foucault/Burchell, 2008)

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