Applied Geography 31 (2011) 761–769

Contents lists available at ScienceDirect

Applied Geography

journal homepage: www.elsevier.com/locate/apgeog

# Poo gurus? Researching the threats and opportunities presented by human waste

Sarah Jewitt

*School of Geography, University of Nottingham, University Park, Nottingham, NG7 2RD, United Kingdom*

*Keywords:*
Excreta
Threat
Opportunity
Humanure
Ecosan
Biogas

A B S T R A C T

There is huge geographical variation in the extent to which excrement represents a threat to human and environmental health. In the UK, we tend to think little of such risks. By contrast, 52% of all people in Asia have no access to basic sanitation and 95% of sewage in developing world cities is discharged untreated into rivers, lakes and coastal areas where it destroys aquatic life, reduces the potential of these ecosystems to support food security, facilitates the transmission of diseases and has a significant economic impact in terms of working days and earnings lost due to ill health. At the same time human excrement represents a resource that could be better utilized to promote human livelihoods and improve environmental quality through use as manure and as a source of biogas energy. This paper seeks to provide an overview of the importance of human waste (as both a threat and an opportunity) in different spatial, historical and cultural contexts and to highlight potential areas of interest for applied geographical research in future.

© 2010 Elsevier Ltd. All rights reserved.

## Introduction

According to the United Nations (2008), a child dies every 20 s due to a lack of access to clean water and sanitation; that's 1.5 million preventable deaths each year. One of the key causes of these deaths is exposure to pathogens associated with human excreta, but huge spatial inequalities exist in the extent to which such waste threatens human, environmental and economic health. In the UK, we think little about such threats except in terms of a general consciousness of the need to wash our hands after going to the toilet and a broader awareness of the environmental problems associated with sewage treatment and disposal. By contrast, 52% of all people in Asia have no access to basic sanitation and 95% of sewage in developing world cities is discharged untreated into rivers, lakes and coastal areas where it destroys aquatic life and greatly reduces the potential of these ecosystems to support food security (Esrey et al., 1998; Hannon & Andersson, 2001; Watson & Zakri, 2008). Globally, over 200 million tonnes of human waste go uncollected and untreated each year (UNDP, 2008).

In addition to fouling the environment, this facilitates the transmission of diseases such as typhoid and cholera and has a significant economic impact in terms of the cost of medical care plus working days and earnings lost due to ill health and tourism (WaterAid, 2009). In India alone, 73 million working days are lost each year as a result of waterborne illnesses (Wherever the Need, 2008). World Bank data for India and Nepal, meanwhile, estimate that these countries lose USD 238 million and 5.7 million per year respectively in tourism revenues due to a perception of poor sanitation (Arby, 2008). The United Nations (UNDP, 2008, p. 1) also emphasizes the economic costs of poor sanitation with its estimate that every dollar invested in sanitation improvements "*generates an average economic benefit of $7*" whereas the "*economic cost of inaction is astronomical*". To meet Millennium Development Goal 10 (which seeks to halve, by 2015, the 2.6 billion people who currently lack access to basic sanitation) and address the threat that human waste (plus the profligate use of potable water for sanitation purposes) represents to environmental quality and ecosystem functions/services globally, there is an urgent need to develop improved sanitation and sewage treatment systems (Esrey et al., 1998; George, 2008; Rockefeller, 1998; Rosemarin, 2008; UNDP, 2008; Watson & Zakri, 2008). According to the WHO (2006, p. 7) many developing countries need to make significant policy changes and innovations in "*technical choices, financial mechanisms, information and awareness raising and institutional responsibilities … if this challenge is to be met*".

On the other hand, human excreta also represent a resource that could be better utilized to promote environmental quality, meet human livelihood needs and generate economic benefits. One of the most obvious examples is the recycling of 'humanure' for agriculture which can provide environmental as well as economic benefits (Duncker, Matsebe, & Moilwa, 2007; Esrey et al., 1998; GTZ, 2010; Price, 2009; UNDP, 2008; UNEP, 2010) but other opportunities abound. Fuel derived from human waste (notably biogas) has a number of environmental advantages as well as representing a potentially attractive investment; especially when the prices of conventional energy sources rise (Abbasi & Abbasi, 2010; Defra, 2010; Gasworld, 2010; Guardian, 2008; ter Heegde & Sonde, 2007;

*E-mail address:* Sarah.jewitt@nottingham.ac.uk.

0143-6228/$ – see front matter © 2010 Elsevier Ltd. All rights reserved.
doi:10.1016/j.apgeog.2010.08.003

Lohri et al., 2010; Thames Water, 2009). According to Rodriguez and Preston (2007, p. 2) using excrement to produce biogas can "*play a pivotal role in integrated farming systems by reducing health risks, facilitating control of pollution and at the same time adding value to livestock excreta through the production of biogas and improved nutrient status of the effluent as fertilizer for ponds and crop land*".

Yet despite the global significance of sanitation issues and the use/management of human excrement more generally, contemporary applied geographical research on spatial and temporal variations in the use and management of human excreta is quite hard to find.[1] Although geographers have carried out some fascinating work on animal manure as a pollutant (Ivey, de Loe, & Kreutzwiser, 2006; Lowe et al., 1997) and a fertilizer (Adams & Mortimore, 1997; Baker, 1973; Baker and Jewitt, 2007; Chisholm, 1961; Grantham, 2007; Harris, 1999, 2002 ; Harris & Yusuf, 2001; Ingram, 2008; Jewitt and Baker, 2006; Matless, 2001; Robbins, 2004; Widgren, 1979; Williams, 2008), only a small number of geographers have been actively engaged in research that deals with human waste; and most of this work deals with it in somewhat tangential (though nonetheless important) ways. Examples include research within medical geography on faecal transmission routes (Anderson, 1947; Abrahams, 2006; Cliff, Haggett, Smallman-Raynor, 2004; Haggett, 1994; Cliff, Haggett, Smallman-Raynor, Stroup, and Thacker, 2008; Haviland, 1982; Howe, 1963, 1980; May, 1950, 1952; Rupke, 2000; Smallman-Raynor & Cliff, 2001, 2004; Smallman-Raynor, Cliff, Trevelyan, Nettleton, & Sneddon, 2006), cultural and historical geographies of agriculture, organicism, sanitation and cholera (Bacon, 1956; Colten, 1994; Gandy, 2005, 2008; Goddard, 1996; Kearns 1984, 1989, 1991, 2000; Krantz, 2006; Matless, 2001; McFarlane, 2008a; Sheail, 1993; Smith, 1975) and wider theoretical conceptualisations of dirt (Campkin and Cox, 2007; Cresswell, 1996, 1997; Cox, 2007; Holloway et al., 2007; Krantz, 2006; Sibley, 1995). Research that deals more directly with human waste is even less widespread although empirical work on 'watsan' (water and sanitation) issues in the global South (Andersson, 2001; Desai, 1995a, 1995b; Gandy, 2008; Giles & Brown, 1997; McFarlane, 2008a, 2008b; O'Hara, Hannan, & Genina, 2007; Jewitt and Labhsetwar, 2009; Swyngedouw, 2004, Swyngedouw, Kaiko, & Castro, 2002) and research on the analysis, modelling and prediction of water and beach contamination by sewage and other pollutants (Anayah & Almasri, 2009; Collins & Anthony, 2008; Kay et al., 2007; Rahman, 2008; Reeves & Patton, 2005) demonstrates the importance of applied geographical research on these topics. And in combination with wider geographical research on environmental quality, this work has provided some important monitoring, modelling and participatory resource management tools for improved land use planning and environmental management which have great relevance for understanding and managing the threats and opportunities created by human excreta (Anayah & Almasri, 2009; Collins, Grineski, & de Lourdes Romo Aguilar, 2009; Collins & Anthony, 2008; Dewan & Yamaguchi, 2009; de Graaff et al., 2008; He, Okada, Zhang, Shi, & Zhang, 2006; Ivey et al., 2006; Kamusoko, Aniya, Adi, & Manjoro, 2009; Maantay & Maroko, 2009; Maconachie, Dixon, & Wood, 2008; Mishra & Griffin, 2010; Rahman, 2008; Rhoades, O'Neal, & Pizzuto, 2009; Velázquez et al., 2009; Wang, Yu, Cinderby, & Forrester, 2007; Zeilhofer & Topanotti, 2008).

[1] Black and Fawcett (2008: 75) point out that the 'great distaste' surrounding human waste topics has tended to result in its neglect as academics have tended to shy away from conducting research on excrement and "*politicians, celebrities and philanthropic corporate donors [are] willing to couple their names only to delightful water, rarely to nasty shit*".

Given the importance of human waste as an influence on human and environmental health, this paper argues for a more coherent emphasis on such issues within applied geographical research and highlights a few topics for potential study that would enable geographers to apply their expertise outside the academy thus satisfying recent demands for greater relevance in geographical research (Cloke, 2002; Gregson, 2003; Kitchin & Hubbard, 1999; Pain, 2003, 2004). Particular attention is drawn to the (temporally fluctuating and regionally varied) tensions and ambiguities that exist between the status of human excrement as a threat to human/environmental health and as an important resource (in the form of 'humanure', ecological sanitation and 'excrement to energy') for human livelihoods. Examples are drawn from both the global North and South.

## Dirt pollution and taboo: insights into the spatial and cultural boundaries surrounding human waste

The anthropological work of Mary Douglas (1966) is particularly valuable for understanding ideas of human excreta as a threat and she is highly sensitive to space in her analysis of how concepts of dirt, pollution and taboo enable different cultures to construct boundaries and identify (real and symbolic) spatial limits that enable them to feel secure and in control of their environment. Other theoretical perspectives that focus specifically on human waste include the work of Laporte (2000), Poovey (1996) and Hawkins (2006); all of whom highlight geographical tensions over the (private) production and (usually public) management of excreta.

In terms of identifying policy-relevant research agendas for geographical research on human waste, the inherent spatiality of Douglas's work offers an important theoretical framework for the development of interdisciplinary geographical perspectives that can draw together critical academic research on excreta and more applied approaches to the threats and opportunities presented by it. Some exciting insights into the types of theoretial work that could be done can be found in Campkin and Cox's book entitled *Dirt: New geographies of cleanliness and contamination* (2007). Building upon Mary Douglas's work along with Kristeva's (1982) theory of abject matter and Miller's (1997) 'anatomy of disgust' Campkin and Cox examine the conceptualisation of dirt and cleanliness in different temporal and spatial contexts and investigate how these find expression within (and influence the arrangement of) different urban and rural spaces. They consider dirt "*at a theoretical level, but also as that which slips easily between concept, matter, experience and metaphor*" (p. 1). Yet despite the book's emphasis on "*the spatiality of dirt and cleanliness*" and how understandings of these concepts "*are located within and constitutive of space and social relations*", only a few of the chapters are actually written by geographers.

Nevertheless, Campkin and Cox do identify important opportunities for "*interdisciplinary spatial enquiry*" (70) on dirt that could form the basis for future geographical research on human waste more specifically. Quoting William Cohen, they show how "*filth represents a cultural location at which the human body, social hierarchy, psychological subjectivity, and material objects converge. Standing at a theoretical crossroads, filth is at once figurative and substantive*" (Cohen, 2005, viii cited in Campkin & Cox, 2007, p. 6). They also highlight contrasts in conceptualisations of dirt between rural and urban spaces and show how "*theoretical work on dirt has in the main remained distinct from literature on its materialities*" (p. 7) in terms of cleaning practices, or environmental histories of urban infrastructural development, waste and sanitation management: linkages that geography's interdisciplinary perspectives are well placed to explore.

Download English Version:

https://daneshyari.com/en/article/83785

Download Persian Version:

https://daneshyari.com/article/83785

Daneshyari.com