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Exploring "The Remote" and "The Rural": Open Defecation and Latrine Use in Uttarakhand, India

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Summary. — Open defecation is a major global health problem. The number of open defecators in India dwarfs that of other states, and most live in rural places. Open defecation is often approached as a problem scaled at the site of the individual, who makes a choice not to build and/or use a toilet. Attempts to end rural open defecation by targeting individuals, like social marketing or behavior change approaches, often ignore the structural inequalities that shape rural residents' everyday lives. Our study explores the question, "What is the role of remoteness in sustaining open defecation in rural India?" We deploy the concept of remoteness as an analytical tool that can capture everyday practices of open defecation as a function of physical and social distance. Using ethnographic methods, we interviewed and observed 70 participants in four villages in Uttarakhand, India over a three-month period in 2013. We find that remoteness in general, and its lived nuances, form a context for prevalent open defecation. Structural inequalities across space will need to be addressed to make latrine building and usage viable in remote places.

Key words — open defecation, sanitation, South Asia, India

1. INTRODUCTION

An estimated 360 million people live without access to latrines in rural India, and millions more practice open defecation despite having latrines. Prevalent open defecation remains a major public health concern (Sahoo *et al.*, 2015; Spears, Ghosh, & Cumming, 2013). In October 2014, Indian Prime Minister Narendra Modi inaugurated the *Swachh Bharat Mission* (SBM; Clean India Mission) to eliminate open defecation (OD) by 2019. To meet this goal two major changes must occur: 1. increase in the number of households that have latrines; 2. increase in the number of household members using latrines. The SBM follows decades of national sanitation programing and policy, beginning with the Central Rural Sanitation Programme in 1986 that subsidized latrines at 80% for Below Poverty Line (BPL) households that wanted to build latrines. The Total Sanitation Campaign (TSC; 1999–2012) followed, also using subsidies targeting poor households and introducing health education to drive demand for latrine coverage in rural communities. The Nirmal Gram Puraskar (NGP) introduced in 2003, offered cash prizes to villages, blocks, and districts that became open defecation free. The success of the NGP led to the creation of the Nirmal Bharat Abhiyan (NBA) which continued the use of subsidies (like the TSC) and added the component of CLTS (Community Led Total Sanitation). CLTS advocates shocking communities into the disgusting realization that they eat other people's feces due to OD (Ministry of Drinking Water and Sanitation, n.d.). The NBA continues more comprehensively, under its new name, the SBM. It continues subsidies for BPL households and some Above Poverty Line (APL) households, and has flexibility as to type of latrine construction in the interest of moving poor families onto the first rung of the sanitation ladder and promoting behavior change.

Recognizing that rural areas face unique challenges, the SBM created a separate rural policy called SBM-*Gramin* (i.e., rural; SBMR). SBMR guidelines state, "providing access to the different categories of people who are not able to access and use safe sanitation facilities shall be a priority of the implementing agencies" (Government of India, 2014, p. 16). It clearly lists that access to sanitation resources for "geographically marginalized populations in remote areas" can be addressed by tapping local NGOs and self-help groups (SHGs) for creating rural sanitary marts (Government of India, 2014, p. 15).

Despite the upsurge in sanitation research across disciplines, little engagement with the politics of sanitation has appeared. Scholarship on the politics of sanitation questions public health and economistic research on sanitation that mutes or erases the deeply political nature of these interventions at the scale of the body (e.g., women's mobility) and the scale of the state (e.g., coercive practices of officials). This paper contributes to debates on sanitation by taking forward research on the politics of access to sanitation infrastructure (e.g., latrine building interventions) and natural resources (e.g., access to water). As with most critical sanitation research, it addresses the broad socio-economic context in which OD takes place (Jewitt, 2011). Our particular focus is to deploy the concept of remoteness as an analytical tool that can capture practices of rural OD as a function of physical and social distance. By remoteness as physical distance we mean: absolute distance; inaccessibility; lack of connectivity to urban centers due to poor roads and infrequent transportation; erratic electricity; and poor healthcare and education services. In short, it is the geographic and material infrastructure that separates the

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urban from undeveloped, rural places (Cook, 2013; Jakimow, 2012; Mitra, Dangwal, & Thadani, 2008, p. 169). By remoteness as social distance we mean: economic, political, and cultural marginalization or exclusion of certain communities due to extreme poverty; lack of political capital; and lopsided public policies (Bird, Hulme, Moore, & Shepherd, 2002; McFarlane, Desai, & Graham, 2014; Mitra *et al.*, 2008). More than a checklist of conditions, remoteness comprises their synergies and interconnections. Our ethnography exhibits the interconnection between physical and social distance as key features of remoteness that help sustain prevalent OD in rural Uttarakhand, India.

Our use of remoteness derives from research concerned with the impact of structural inequalities on health equity. By structural inequalities we mean the systematic and ongoing marginalization of specific communities through political-economic means (e.g., disenfranchisement), environmental institutions (e.g., water governance), and social relations of unequal power (e.g., class and caste). This research includes resounding critiques of social marketing (i.e., individuals as consumers who manage their own health) and behavior change approaches (i.e., health education, usually coupled with social pressure to conform) to sanitation that are found to exacerbate health inequalities and social marginality (Crawshaw, 2012; Langford & Panter-Brick, 2013; Lorenc, Petticrew, Welch, & Tugwell, 2013). Both social marketing and behavior change approaches ascribe almost limitless agency to individuals, thereby setting up a situation in which those who can change their behavior do, and those who cannot, due to structural factors, do not enjoy better health and may face additional social stigma for failing to maintain new social norms regarding health behaviors (Langford & Panter-Brick, 2013). In essence, ignoring structural causes of health inequity, inadvertently creates greater inequity. Thus, we are driven to examine sanitation in remote places, and to re-attach individual lives to the social, political, economic, and environmental relationships that surround them.

Drawing on two months of ethnographic fieldwork in the primarily rural state of Uttarakhand in northern India, we flip the conventional understanding of prevalent OD as a feature of remote villages (Ahmed & Hassan, 2012) to an examination of remoteness as a key contributor to prevalent OD in rural India. We argue that socio-spatial inequalities create remote places as different from rural places, and hence, that different socio-spatial relationships motivate OD among remote-dwelling people. While critical scholarship on urban sanitation offers insights into the role structural inequalities play in the poor's struggles over and access to sanitation, an examination of how remoteness, as an effect and relationship of structural inequality, sustains rural OD remains undone.

2. GEOGRAPHIES THAT MATTER: OPEN DEFECATION IN REMOTE PLACES

Research on rural sanitation presents an array of reasons for the failure of interventions, motivations to build latrines, and the continuance of open defecation. Cost of an individual household latrine has been identified as a significant constraint on building (Jenkins & Scott, 2007), leading to assertions that subsidies increase latrine building among those who receive them *and* those who do not (Guiteras, Levinsohn, & Mobarak, 2015), while others have argued that they incentivize latrines that people do not want or use (Gerwel-Jensen, Rautanen, & White, 2015). Doron and Jeffrey (2014) proposed a need for education about health impacts to encourage latrine usage, although education was not found as a factor by Gross and Günther (2014; see also Whittington, Lauria, and Choe (1993)) and may need to overcome existing understandings of health that view OD as more healthy (Coffey *et al.*, 2015). The convenience and comfort of OD were reasons informants gave for behavior; these same reasons were given for latrine construction (Routray, Schmidt, Boisson, Clasen, & Jenkins, 2015). Gendered research has found that privacy and safety for women appears as a recurring theme for building across regions (Jenkins & Curtis, 2005; O'Reilly, 2016), and Barnard *et al.* (2013) found in rural India a slight association between latrine ownership and the female household head's level of education.

Given the magnitude of OD in rural India, a large body of sanitation research focused there has emerged. Recent work has considered, as influences on building and usage: cultural factors including caste and purity (Routray *et al.*, 2015); gendered psychosocial stress (Hirve *et al.*, 2015; Sahoo *et al.*, 2015); gender norms (Khanna & Das, 2015; O'Reilly, 2010) preference for open defecation (Coffey *et al.*, 2014); and natural resource governance, especially water (O'Reilly & Louis, 2014). Barnard *et al.* (2013) examined India's TSC, and found that only 47% of subsidized latrines were still functional, meaning high walls, a door, a roof, a covered pit, and a functioning pan. Of functional latrines, 95% were being used three years after the intervention and 33% of nonfunctional latrines were in use. The authors conjectured that households that wanted to use a latrine were more likely to build and maintain a functional latrine; those who did not use or want to use their unit were less likely to maintain it. Nevertheless, their results indicated that some individuals wanted to use their latrines whether they were functioning or not.

Coffey *et al.* (2014) examined rural preference for OD despite access to latrines, using an economic definition of "preference" as a choice an individual makes among multiple options. Through an extensive survey instrument, the research team found that most rural dwellers in four north Indian study areas, whether they had access to a latrine or not, preferred OD because it was more pleasurable, comfortable, and/or convenient than using a latrine. Household members were concerned about the latrine pit filling; and using a latrine was perceived as no healthier than OD. Because in poorer places (e.g., Sub-Saharan Africa) people build low-cost sanitary latrines, Coffey *et al.* (2014) suggested that Indians are not too poor to also build sanitary latrines, but unlike their international counterparts, rural Indians perceive latrines as expensive or luxury items. The implication is that low-cost, acceptable latrines are not available in rural north India due to lack of demand. This same lack of demand was tentatively linked to poor construction of TSC latrines; recipients did not plan to use the units, thus they did not insist on quality of construction (Coffey *et al.*, 2014).

(a) *The politics of sanitation*

Amidst debates that center on the complexity of reasons for the continuance of OD is a strain of critical scholarship that attends to the *politics* of sanitation. Social relations of unequal power such as informal, intersecting politics of patronage, gender, class distinction, caste hierarchies, and communalism designate who can, and does, shit where (Baviskar, 2004; Desai, Mcfarlane, & Graham, 2015). Informal politics often, but not always, occur at a local scale. For example, women's isolation increased when Rajasthani families built household latrines, motivated by regional ideals of women's seclusion (Barnard *et al.*, 2013; O'Reilly, 2010). Formal politics (e.g., legislation, elections) are least accessible to the poor and other socially marginal groups (e.g., native peoples) in ways that limit their entitlements to sanitation information and interventions. This engagement with the multi-scalar politics of sanitation fits within a larger body of public health research on the

uneven distribution of public health infrastructure, funding, and outcomes (see Jones, 2012; King, 2010). It rejects apolitical approaches to sanitation that neglect the role that unequal relationships of power play in enabling or constraining access to health resources.

This paper contributes to sanitation debates by exploring the linkages between geography, social inequality, and OD. It is a response to an urgent need to move beyond identifying individual behaviors toward understanding multi-scalar relationships that support continuing OD. We present evidence that remote places have different socio-spatial relationships, so the reasons for OD in remote places are different than the reasons for OD in rural places, as currently debated in the literature. We define remoteness broadly as physical and social distance, and provide a more complete definition below, before discussing research that has investigated questions of how and why remoteness matters for continuing OD. First, we turn to recent critical sanitation scholarship that critiques mainstream approaches.

(b) *Critical sanitation scholarship*

A key feature of critical sanitation scholarship is a discussion of poverty, its uneven distribution, and the social structures that continue it. An unequal distribution of wealth and social power, the relationships that keep the poor impoverished, the more pressing concerns (above sanitation) of the weakest sections of society, and struggles to maintain a latrine are often ignored in mainstream research, when in fact, they are key factors in sanitation uptake and usage (Langford & Panter-Brick, 2013; Mehrotra & Patnaik, 2008). Mainstream work takes poverty as given, instead of examining poverty as a lived experience that varies from place to place, and is crosscut by other inequalities. Critical scholars Doron and Jeffrey (2014) situated the urban poor within a broader political economy that included class, landlessness, caste, and lack of education as factors for lack of latrine demand. The interrelated factors they outlined were framed by an explicit political goal: the poor should not be seen as "deficient" citizens, who will not accept the public health goals of their government. Instead, the poor's lack of access to sanitation stems from the power of the urban middle class to control both public resources and discussions of environmental health policy (Chaplin, 2011; Mehrotra & Patnaik, 2008). Mainstream studies provide only a partial explanation because they do not consider the exclusion of the Indian poor from political participation, modern infrastructure, and information—"defining feature[s] of sanitation poverty" (McFarlane *et al.*, 2014, p. 1005).

(c) *Remoteness*

The significance of research attending to structural inequalities is its clarity about the social, economic, and political exclusion that the urban poor must overcome to construct and use latrines. It motivates us here to consider these exclusions in rural contexts, where uneven development is experienced as both physical and social distance, i.e., remoteness, by certain sectors of society. Physical distance comprises rough terrain, extreme climate, and absolute distance from political and economic hubs that can make isolation the norm. In their study of chronic poverty, Bird *et al.* (2002) honed in on physical isolation due to distance and topography, physical constraints on agricultural productivity, and social exclusion. Social exclusion (or distance) is defined as "physical isolation [from mainstream society], ethnicity and religious discrimination, bureaucratic barriers, (tarmac) road bias, corruption, intimidation and violence, and the nature of the local political elite" (Bird *et al.*, 2002, p. 14). Remoteness is actively produced; it is "socially constructed rather than an inevitable consequence of distance" (Jackson, 2006, p. 2).

The role of remoteness as social distance remains underexplored in much sanitation work. Rheinländer, Samuelsen, Dalsgaard, and Konradsen (2010) provided a notable exception. They found that ethnic minority groups in the Vietnamese highlands did not hold themselves to the same hygiene standards as lowland communities, despite knowing what those hygiene standards were. The communities' negative perception of themselves in comparison to majority groups (some distance away), limited latrine uptake. Their marginalization was a product of both physical distance (e.g., the highlands) and social distance (e.g., disparaged by lowlanders). A sense of marginalization due to their poor living conditions reinforced OD habits, and they responded negatively to government, low-cost latrine building interventions. OD does not make a place remote, but it may remind communities of their social distance in ways that may limit latrine uptake. Figure 1 summarizes the key aspects of physical distance and social distance that create rural remoteness.

Remoteness has been defined as "where the [Indian] government doesn't reach for development purposes" (Jakimow, 2012, p. 1021). For those living and working in remote places, their relationship to the state, and the state's to them, is a distant one, physically and politically speaking. Wards in rural Tanzania that were poorly connected to district headquarters received less funding for WASH activities because leaders in wards closer to the district headquarters lobbied politicians regularly, and in person (de Palencia & Perez-Foguet, 2011). The state is not the only actor sustaining remoteness; Pretus, Jones, Sharma, and Shrestha (2008) found that sanitation sector NGOs in Nepal selected areas according to accessibility rather than lack of sanitation coverage because of the increased cost of intervention in remote areas. Inaccessibility justified the NGOs' choices and played a role in sustaining limits to villagers' exposure to latrines and sanitation messages.

In the India sanitation literature, more often than not, places labeled as "rural" come with insufficient description of their infrastructure or relationships to other places (e.g., Coffey *et al.*, 2014; Khanna & Das, 2015; Routray *et al.*, 2015). Exceptions include two studies of sanitation-related psychosocial stress: Sahoo *et al.* (2015) who purposefully included a physically distant, tribal area; and Hirve *et al.* (2015) who identified a state highway running through their rural study area, and enumerated the available health facilities, both public and private. Neither of these studies, however, dug deeply into how socio-spatial relationships influenced their findings. Inattention to context or how context matters signals the absence of engagement with the politics and geographies of sanitation poverty. Khanna and Das (2015), for example, identified three structural factors that limit latrine building and usage in three rural districts that were described by name only. The limiting factors were poverty, inadequate sanitation policy and implementation of it, and gender-based power dynamics at the household level. While their attention to structural causes was well placed, the *relationships* of these rural places to other places were not explored, restricting the analysis' explanatory power.

How remoteness may be overcome to facilitate successful sanitation was explored by O'Reilly and Louis (2014) through a "Toilet Tripod" framework. Their study population in West Bengal was geographically and socially distant from the capital city, Kolkata, but a multi-scalar chain of political institu-

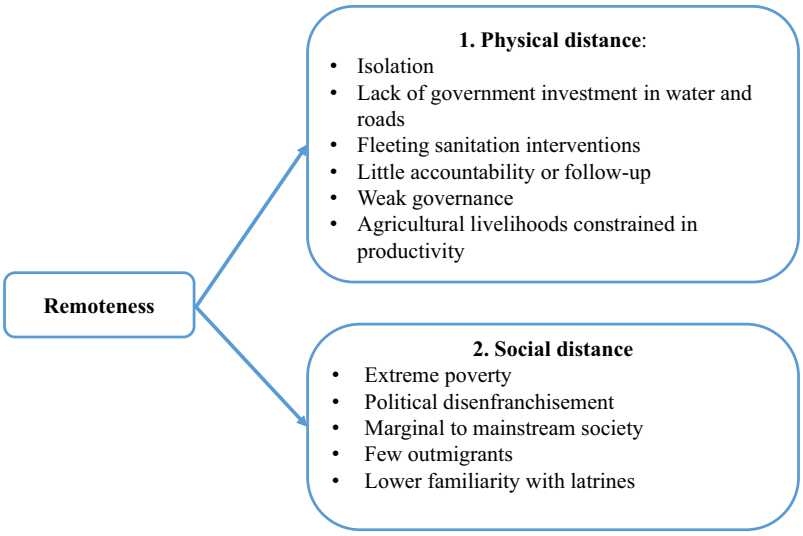

Figure 1. *Aspects of remoteness.*

tions coordinated to connect communities to sanitation resources, including subsidies (i.e., leg one: political will). New seafood markets outside the study area altered localized struggles for access to water bodies in favor of artisanal fishing over OD. This leg of the toilet tripod they identified as political ecology: struggles over access to natural resources (e.g., water bodies for OD or for fishing) that connected with scales beyond the local (e.g., seafood markets). Finally, community pressure to use latrines generated new social norms, in part due to young men's outmigration to urban centers and their return home with familiarity with latrines (i.e., leg three: social pressure). All three legs represented multi-scalar, political-economic processes that reduced remoteness, and supported latrine uptake. Our Uttarakhand study sites were physically distant from the capital, Dehradun, and socially distant in terms of political disengagement.

In this paper we are offering a political, geographic lens to understand OD in rural India. Beyond a list of reasons why rural Indians do not want to build or use toilets, lie structures of patronage and clientelism, caste politics, education inequality, and uneven state investment in infrastructure to remote communities with little political power. Our examination of remoteness insists that debates and solutions to OD engage the politics of sanitation. We should not accept apolitical findings that rural Indians will not use latrines even if they build them, or that poverty is not an important reason that rural Indians do not build latrines, because such statements ask us to ignore how physical and social remoteness is created and sustained through ongoing processes. These multi-scalar processes form the context where explanations of OD must be situated. Without explicit attention to the characteristics and relationships that create remoteness, whether and how remoteness matters cannot be known. We argue below that remoteness in general, and its lived nuances, form a context for prevalent OD. Before presenting our ethnographic evidence, we first briefly turn to our methods and study site background.

3. METHODS

We conducted fieldwork between May and July 2013. The district of Tehri Garhwal was selected because it approximated the percentage of rural open defecation for the state as a whole (Uttarakhand Development Report, 2009; UK DR). Villages were selected from within the district based on geographic criteria: they were not peri-urban; and they did not border National Highway 34. Socio-economic considerations were that: they were not tourist centers or proximate to them; they were approximately 100 households (a medium-sized village according to the Census of India, 2011); and they were agricultural communities. We were interested in villages that were rural geographically and in terms of agricultural livelihoods. As most of UK's villages are hill villages, hill villages were selected. We expected that the villages would have experienced one or more sanitation interventions, based on our previous research experience.

Respondents were initially approached if they were in their front courtyards during our first visits. If they were willing to talk, we took their informed consent and proceeded with the interview. If they were not, we simply went on to the next house. Later in the study, when the caste and class composition of the study village was clear, we intentionally visited households throughout the village's internal geography so that interviews roughly approximated households' socio-economic variety in the village.

Seventy open-ended interviews of roughly an hour each were conducted in individual and group settings with latrine owners and nonlatrine owners. Questions covered social norms, livelihoods, habits, and local politics that influenced the building and usage of latrines. Interviews were conducted in Hindi by the authors and were audio recorded. Extensive field notes were also taken. The recorded interviews were then transcribed and translated into English for data analysis, after which they were coded by the authors in an iterative process. All participants gave their verbal informed consent. The research was approved by the Texas A&M University Institutional Review Board.

Ethnography offers the advantage of "getting to know people in place," by speaking and observing them in their everyday lives. Our ongoing presence generated trust, but it also may have generated researcher bias. We avoided using data that we believe was related to please us, based on our own observations and other interviews triangulating information gathered.

4. CHARACTERISTICS OF THE STUDY AREA

Our study sites were located in Uttarakhand, which is 85% mountainous and 65% jungles. Uttarakhand has a total population of 10 million; 70% of which is rural (Census of India, 2011). Of the 1.2 million people who live in poverty in Uttarakhand (UK) state, 67% live in rural areas. The four villages in our study site—UK1, UK2, UK3, UK4—were located in Tehri Garhwal district, one of India's 254 most-backward districts. [1] The four villages were between 100 and 300 km from both the state and national political and economic hubs (i.e., Dehradun and New Delhi, respectively). In absolute distance, they were proximate to these hubs compared to other well-developed places, but poor roads and the absence of public transportation made travel time-consuming. Agriculture, transhumance, and outmigration are the key economic activities in rural Uttarakhand and in our study villages, with the exception of outmigration. Villagers in UK3 and UK4 grew apricots and poppy seed for sale in outside markets. Only two of our informants (of 70) worked for wages.

Forty percent of villages in Uttarakhand had no access to a road (UK DR, 2009). Only 15% of the 1,801 villages in Tehri Garhwal district had paved approach roads (Census of India, 2011). The UK state public works department intended to provide all-weather roads to all villages above the population of 250 by 2010 (UK DR, 2009, p. 67), but this was not the case in our study site as of July 2013. UK1 had a paved road going up to the village; the other three villages had dirt roads. Accessing UK 2, 3, 4 involved long walks, often through hilly routes. These villages had electrical wiring, but electricity was totally unreliable. UK4 was the poorest and remotest village in our study site; it did not have electricity. Getting there involved a steep walk up from UK3, which was also not connected by a paved road. Goods and materials were hauled either by humans or mules. Landslides were common occurrences that further reduced villagers' access to nearby towns and cities (UK DR, 2009, p. 29).

Almost 50% of total households in Uttarakhand had access to tap water from a treated source on their premises. In Tehri Garhwal, this number was at approximately 34%, for both total and rural households (Census of India, 2011). Between the 1990s and mid-2000s, all four villages had experienced only two short-term water and sanitation interventions—one from the state government's rural water supply project called *Swajal* (Safe Water), and the other from a nonprofit organization called *Himmotthan Pariyojana* (Project for the Himalayas) for water and sanitation improvements. All villages had a community water tank but villagers reported water scarcity when pipelines broke during the monsoon and when the springs' source dried up during summer months. Wealthy villagers in UK1 with latrines had latrine water taps connected to the pipeline built by the Swajal and Himmotthan projects. Other villagers either hauled water from community tanks or public taps or springs, or constructed their personal latrine tank and connected it with a public water supply system.

Thirty-four percent of total Uttarakhand households and 45% of rural Uttarakhand households did not have latrines, according to the Census of India. In Tehri Garhwal, 50% of rural households were reported to not have latrines. This number strikes us as suspiciously low, given our fieldwork and the fact that the district is one of the "most backward districts" in India. Figure 2 illustrates that Uttarakhand is a state with fewer households without latrines from 2001 to 2011 in comparison to overall India. Nevertheless, 45.9% of rural UK households do not have latrines. Table 1 presents a profile of household latrines at the study sites.

Uttarakhand and Tehri Garhwal are primarily Hindu in their religious composition. A majority of the households across all villages were Hindu with varying caste compositions. Household family size varied from 1 to 25 members, with an average size of 6–8 members. With the exceptions of a few graduates, most informants' education ranged from uneducated to 12th grade.

5. CONTEXTUALIZED REASONS FOR OPEN DEFECATION

(a) *Livelihoods*

As part of everyday livelihood and household routines, men and women defecated at a distance from their homes while collecting fodder, wood, water, grazing cattle, or working in agricultural fields. Irrespective of whether villagers had latrines at home or not, they practiced OD to save time instead of returning home to use the latrine. Dayaram in UK1 had a latrine with a water tap since 1994, built through the UK government's Swajal Project. All ten members of his family used the latrine. While out for grazing, he saw no point in making a one km trip back home to use the latrine. He explained,

> *"When I go out for work, I can't come back to the house to defecate…I may go to chappar. I have cows, goats, buffaloes, and mules. I may take them to the jungle to graze."*

OD also suited women like Renu in UK2, who believed that daily chores and OD should be simultaneously accomplished to save time. She had a latrine with a water tap, but she also practiced OD depending on the location of her chores. She said,

> *"Sometimes I go for OD; sometimes I use the toilet. It's not like I always have to use the toilet. When I go for work here and there, I defecate in the jungle."*

Daily chores associated with livestock grazing or fuel and fodder collection meant OD was convenient (easy to find a private place) and efficient. The same reasons were given by informants when daily chores kept them at home.

In rural Uttarakhand, transhumance is a common economic practice in this mountainous region. Villagers maintained a hut, known as *chappar,* usually within 1–3 km uphill from their village. While some families spent a few months living in their *chappars* to tend crops and feed livestock, others made daily trips. Priyanka and her husband lived in the remotest village UK4. They had a latrine with water tap inside that was built through a 100% subsidy from the Swajal Project. Priyanka stated that

> *"…when we are in chappar, we shit in the open and when we are home, we use the latrine."*

Households supporting themselves through agriculture and livestock raising practiced OD at certain times of the year. Some of these households with latrines used them during the winter months, but not in the summer. No households with latrine used them year round. Households without latrines defecated in the open year round. Transhumance and agriculture in UK study sites were small-scale, rudimentary, labor-intensive, localized, seasonal forms of livelihoods practiced over generations, and with little scope for diversification or expansion—the economics of remoteness. Location and efficiency defined defecation practices at certain seasons of the year as well as on certain days.

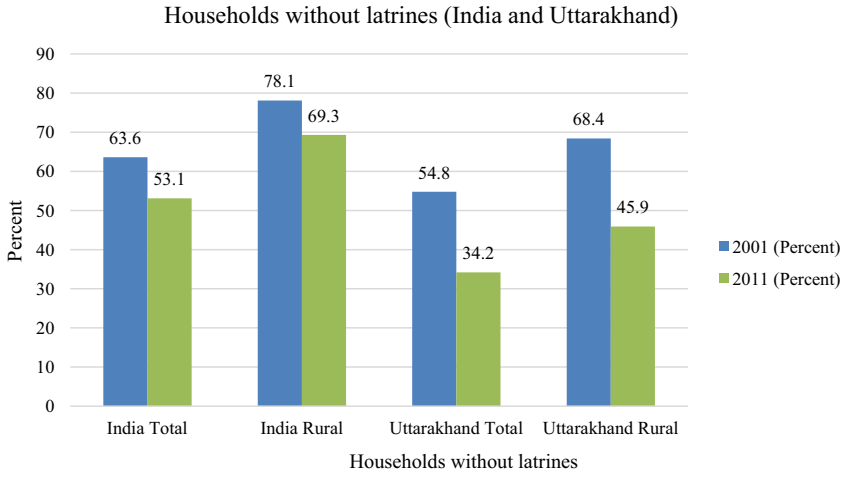

Figure 2. *Comparison of households without latrines in 2001 with 2011, in India and Uttarakhand.*

Table 1. *Profile of latrines and water in the study site*

Household (HH) data	Village				Total
	UK1	UK2	UK3	UK4	
Total HHs in each study village[a,b]	93	114	85	141	433
Total HHs interviewed	18	16	18	18	70
Total BPL HHs	8	9	8	12	37
Total SC households	8	1	2	5	16
HHs with toilets	11	10	8	6	35
BPL HHs with toilets	2	3	1	4	10
SC HHs with toilets	2	0	1	1	4
Toilets under construction	1	1	0	0	2
HHs with TIL[c]	8	3	4	2	17
HHs with TIL that OD[d]	0	0	0	0	0
Toilet + OD	3	6	6	5	20
Total HHs with presence of water in latrines	8	5	3	3	19
Presence of water in BPL latrines	1	0	1	1	3
Presence of water in SC latrines	1	0	0	1	2

[a] HH data from Government of India (2012), Swachh Bharat Mission Baseline Survey.
[b] All other household, latrine, and water data are that collected by the authors.
[c] TIL is Tap in Latrine. That there is water in it is not guaranteed. See "HHs with presence of water" below.
[d] Several HHs with TIL practiced OD when out for transhumance, agriculture, or daily chores. For example, in UK2, all HH members did not use there latrine all the time despite having TIL. This was clearly stated by HH members during interviews.

(b) *Costs*

Difficult terrain, poor roads, and distance of the villages from big markets—the physical characteristics of remoteness—made heavy materials, such as cement, bricks, and sand, additionally expensive due to time and labor involved in delivering them. Villagers purchased raw materials from nearby towns and hired mules or cars to ferry them to their village. For example, for households in UK4, the poorest and least connected village in our study area, hiring a mule to haul two bags of cement from the nearest market costs Rs. 60 (US$1.20).[2] Masons had to be hired from elsewhere due to the lack of local skilled masons.

In rural UK, approximately 700,000 people lived below the poverty line (BPL) as of 2011, wherein the poverty line was calculated at $17.60 per month (Planning Commission, 2013). Among the 70 households in our study, 37 identified as BPL. We estimated the cost of a simple single pit, pour-flush latrine based on three main materials, and their transportation costs to the study villages (Table 2). The total expense of $63 for only bricks and cement is high for a BPL family. (There are cheaper models of latrines, but pour-flush models are the minimum standard in most rural places the authors have worked.) How this finding differs from research on deterrents to latrine demand due to cost in rural places, is the additional costs associated with remoteness. Below we demonstrate that perceptions of latrine expenses compared to actual expenses are less skewed due to the additional costs of transport and acquisition of necessary labor. We did not price labor costs in Table 2, but note that labor, unlike materials, would need to reside in the village while the latrine was being built, due to travel distances.

Pradeep from UK3 was a lawyer in Delhi and visited his mother every summer. His family built a huge room containing a latrine and bathroom for $700, without subsidies, in 2009 when his brother got married. Despite the high cost, Pradeep could afford to build a latrine and a private water tank placed over the latrine's roof, which was then connected to the village

Table 2. *Estimated toilet construction expense in study sites*

	Material (M)			Transportation (T)			M + T
	Unit cost	Units	Total cost	Unit cost	Units	Total cost	Expense
Bricks: 360	\$3.35 × 50	7.2	\$24	\$1 × 50	7.2	\$7	\$31
Cement: 3 bags	\$6.70 × 1	3	\$20	\$0.60 × 1	3	\$1.80	\$21.80
Basic pan and squatting slab	\$10	1	\$10	Data not available	—	—	\$10
Expense			\$54			\$8.80	\$62.80

Note: The estimates of materials needed are based on information from our informants. Materials' prices sourced through basic online search of low-cost latrine materials' prices in India.

water supply provided by the state government. When asked why people did not make or use latrines, he said,

> *"The road is 3 km away from our village. We hire mules to carry bricks. It takes \$1 to carry 50 bricks by a mule. I brought 2,000 bricks to build my latrine. Can you imagine the cost? The mule would bring the bricks up to a point where there are still proper paths for them. We have to keep labor men to bring bricks from there. So we think it's better to go for OD."*

Pradeep had a huge latrine with a bathroom attached. It was also reasonable to assume he could afford (or borrow) to build such a latrine/bathroom and roof-top water tank using 2,000 bricks and paid labor. Even if other poorer villagers built smaller basic latrines and substituted paid labor with their own, the construction expense was a deterrent compared to the ease of going for OD.

(c) *Water*

Rakesh believed that water was essential for a latrine to be functional. He lived up a steep hill from the village center in UK1 and did not have a latrine. In addition to construction expenses, he estimated at \$650, tapping into the village's centralized water supply was beyond his means as a day laborer. Hauling water for latrine flushing and post-defecation anal cleansing was too cumbersome to entertain the thought of making a latrine. He elaborated on the connection between water and latrine use,

> *"We bring our drinking water from 1 km away…We carry water in a vessel [to a spot for OD]. We defecate and wash there. Then we go to the water source, wash our hands and face, collect water and come back."*

Due to the steep orography and poor water supply in UK villages, it was common practice for villagers to take their water-centered chores closer to the water source than haul water to the chores. For example, women washed clothes near public taps or community tanks and most villagers defecated near springs.

The task of supplying water to latrines by hand, we were told, limited latrine use to night or emergency uses. Dinanath's family in UK2 practiced OD despite having a household latrine. He said,

> *"Yes, we go (for OD) because there is no water in the latrine. We have to bring water from far to use the latrine. There's water problem. I have made a latrine, and at night or during emergency, it can be used."*

It cost households \$40 to affix a household tap to the communal water supply. This option was only available in UK1, the sole village with an improved water source. Once installed, water charges were between \$2 and \$4 per month. In the other three villages that only had spring-fed water tanks, water had to be brought to latrines by hand or by breaking into the pipe carrying spring water to communal tank. Villagers with household taps clearly stated that water supply was compromised during monsoons and summer seasons if communal pipes broke or water sources dried up. Without convenient water for flushing and washing, OD near natural water sources (at a distance) was regular for those who had a latrine without water, and sometimes seasonal if water supply was disrupted. Our study did not capture information on access to water for other household activities.

(d) *Pits*

Mahesh in UK2 agreed that latrines were convenient, but he found them filthy, especially with a filled pit. Unlike in cities, village latrines were not sewer-connected and hence did not take the filth away from the house. He said,

> *"A pit will fill in 10–12 years and by that time we will be old. If our children don't empty the pit, how are we going to move the filth away from the house? Maybe, the roads will be proper by that time."*

Some villagers kept their latrines locked. Dhirendra in UK3 village explained,

> *"If the pit fills there's no way of cleaning it over here* [in this village]. *This is also the reason for people not using a latrine."*

Inability to empty pits was a recurring theme among villagers with or without latrines, and was related to the inaccessibility of villages due to poor roads. It was common for villagers to restrict latrine usage to only the elderly and children so that pits did not fill quickly. Only one woman who lived at the side of ravine, was unconcerned; she told us she would simply open her pit when it was full and let the waste flow into the ravine. Fears of pits filling are common in rural Indian communities, especially where village-level caste relations do not define who cleans toilet pits. None of our interviewees mentioned that pits might be cleaned by a particular caste group.

(e) *Interventions and subsidies*

As stated above, all four study sites had experienced some form of government or NGO sanitation intervention (see Table 3).

The NGO *Himmotthan Pariyojana* had a patchy presence in the remotest village UK4 since 2006. NGO fieldworkers promised subsidies for latrines and provided 11 public stand posts. Bharat Singh's ten-member household did not have a latrine, which he explained as a function of a failed intervention. He said,

> *B: "Himmotthan people came once and exaggerated their schemes. Two–three latrines might have been made [out of 141 households] but they are incomplete as they [Himmotthan] did not pay."*
>
> *B Son: "They promised to provide \$30. Can a latrine be built on that money? Nowadays, a latrine costs more than \$600."*

Table 3. *Latrine construction subsidies for households in study sites*

Village	HHs with toilets	HHs with subsidy			Source	Type
		Total	BPL HHs	SC HHs		
UK1	11	6	1	1	Swajal UK government	$24–$46
UK2	10	3	0	0	Swajal UK government	$44
					Local hospital	Pan, Cement
UK3	8	1	1	0	Block scheme for bank loan	$200 subsidy in loan
UK4	6	4	1	0	Himmothan NGO, Swajal UK Government	$44
Total	35	14	3	1		

Source: The information in the table above was compiled from information supplied by our informants and an internet search of the respective schemes (September 2015).

Bharat Singh pointed to an NGO that came once to his village. The NGO did convince 2–3 households to build, but they were not finished when it did not return to finance them. Most villagers remembered previous interventions as incomplete and temporary.

Subsidies were too small to entice people to build in relation to the actual construction cost, even if the amount mentioned above is exaggerated by double or triple (see Table 2). The few latrines they knew of locally had cost nearly 20 times more than these subsidies. Bhaskar in UK2 worked at a hospital in Mussoorie, 24 km from his village. He constructed a latrine after receiving materials and an unspecified monetary subsidy from the hospital. Bhaskar noted that the subsidies were not enough, but he used them to build a latrine after his household got a water connection. He built a latrine because he could afford it, and because with a water connection, his family was ready to use it. He explained why the same subsidies did not materialize into latrines for other villagers,

> *"The [hospital staff] distributed many latrine materials in this area, but people did not make them. Cement sacks were sold by the people. They even sold pipes, pans and tin sheets that were provided by the hospital because a latrine could not be built with only those things."*

Only 10 of the 37 BPL households interviewed across the four villages had a latrine, out of which only three received some form of subsidy (see Table 3). These data correspond with those found by Coffey *et al.* (2014) in rural north India, i.e., subsidies had little impact on uptake by BPL families; latrines were mostly built without subsidies by wealthy families.

Villagers believed that corruption made the subsidies so low that the poor could not cover the remaining cost of building a latrine while the rich could supplement that amount with personal funds to construct latrines. Several villagers believed that more generous subsidies were available for all by the state and NGOs, but these were "eaten up" as they trickled down from the state/NGO to the village level. Pradeep in UK3 speculated about pilferage of public funds,

> *"If the government says that they will help us build latrine by providing $100 then we will get only $20 in hand. If the District issues $200 to every family for building latrines, then the money turns to half by the time it reaches the Block [the next political subdivision]. The official who brings the money to the village will take his share, meaning we will get $40–60 in the end."*

Bheema in UK1 discussed poor accountability,

> *"What happened was that the officers made us sign in a paper that says we received the money and they ate up [kha gaye] the rest of the money themselves. They showed the government that they built latrines for people. Officials should have come to check if the latrine was built properly."*

No one came to check Bheema's latrine, which was so poorly constructed for want of funds that it was never used. The research team found several households with incomplete pits and no superstructure. Villagers informed us that sanitation programs promised to offer subsidies once they dug the pits, but no one returned to check the pits or distribute the subsidies. Corruption and lack of accountability defined villagers' experience with interventions that promised more than they delivered, leaving many with open pits or unusable latrines. Bheema proposed a solution that he believes would have resulted in a latrine that was functional, but his desire for a latrine was put on hold.

6. DISCUSSION

Researchers have spent decades debating the reasons for open defecation, reasons for latrine adoption, and intervention approaches. An important element of sanitation solutions is that "sanitation does not stand still," (McFarlane, 2014, p. 999) because of constant changes in local conditions and practices, new approaches and technologies, and shifts in households' priorities. For these reasons, Whittington, Jeuland, Barker, and Yuen (2012) cautioned against evidence-based policy for setting global sanitation priorities based on cost-benefit analysis, because robust data are extremely difficult to collect, and is not likely to ever be available. In this paper, we have shown the importance of sanitation-in-context, including: 1. environmental impacts of livelihood practices and related poverty; 2. inequalities in government spending on infrastructure linked to urban bias and political marginality; and 3. short-term interventions guide sanitation practices in remote places. We have sought to move beyond itemizing factors for open defecation or latrine usage to understanding the socio-spatial relationships in which these occur, and to demonstrate that these contexts need to be tied to structural inequalities, because these are the conditions in which individuals and communities live and make decisions. We have argued that the socio-spatial relationships of remote places are unique; structural inequalities are intensified by physical and social distance, i.e., remoteness.

The question arises as to whether sanitation behaviors in remote places in India are substantially different from those in rural areas. This is an important question, as the efforts of the SBMR are intended to reach all households. We accept that our claims have limits inherent to our methodology; however, as much of research on Indian rural sanitation remains vague on context of communities, available amenities, and their impact on aspects of sanitation, this paper contributes by demonstrating how these interconnections count.

Some, but not all, of the factors influencing OD are similar between remote and rural places, as there are similarities between remote and urban places. Nevertheless, communities are unique due to their social composition and socio-spatially situated multi-scalar relations. For these reasons, multi-scalar context deserves sustained attention for how it guides people's behaviors and individual experiences, so that sanitation research does not attribute to individuals an agency they do not have. As others before us have explained, there is no silver bullet for development and health interventions; blanket explanations and corresponding solutions cannot hope to have the same impact everywhere due to community heterogeneity.

(a) *Agrarian livelihoods*

The work and land-use patterns of people's lives guided their practices of defecation. Nearly all adults were engaged in grazing, transhumance, farming, and fodder/fuelwood collection. For those with latrines, defecating at home was an option, but routine chores prompted nonuse of latrines if they involved walking out a distance deemed too far to return home for defecation. If they were out of the house, they defecated in the open. If they had a latrine at home and they were at home, they used it. Some villagers built for outsiders who might not want to go for OD; others built based on household demand, albeit seasonal. A change in behavior would require that the spatiality of most hill-dwelling households' livelihoods change or their livelihoods themselves change.

For those without latrines, defecation always took place in the open, but agricultural work, in these circumstances too, guided the distance that people traveled. When work kept them at home, then defecation took place downhill from the settlement near streams, or in surrounding jungles, usually near a water source like a spring. Houses were constructed on terraced hillsides, giving little privacy to those who lived below; valleys were steep enough that streambeds afforded some privacy. As in other rural and urban places, people directed their footsteps toward OD grounds as prudent and proximate to where they lived, barring that they did not have agricultural work that took them away.

Villagers were embedded in very basic routines and livelihoods due to the lack of diverse economic opportunities. Those with land practiced agriculture; those without land worked as agricultural laborers. Only poppy farmers had obvious wealth in the form of durable goods.[3] Without regular, affordable transportation to urban centers, commuting from remote villages to paid work was not an option for most families, especially BPL. No one we spoke to owned a vehicle. An off-farm income meant outmigration with occasional returns to home. The two men in our study that earned an off-farm income had latrines at their village home, and they lived most of the time in urban centers. These men did not use their village latrines; they used the opportunity of visits to defecate in the open. They were also in the minority; most men and women who defecated in the open did so because of livelihood practices.

(b) *Cost*

During interviews, we heard men give an estimate of the cost of a latrine in the range of $600. Pradeep, the wealthy lawyer who had built a latrine, told us that he had spent $600. There was a general consensus of what a latrine costs, albeit exaggerated. Households envisioned themselves building latrines like their wealthy neighbors', so they estimated a similar price.

"Perceptions of costs" arguments suggest inadvertently that if the poor knew what a low-cost sanitary latrine really costs, they would build. Poverty is not the roadblock, it is culture (Coffey *et al.*, 2015; Jenkins & Curtis, 2005). The unstated prejudice in these discussions of poverty (too poor to build) v. perception (too expensive to build) is that the poor should not want what they want (better latrines); they are poor, so they should want something else (low-cost latrines). Critical sanitation scholarship views access to sanitation, whether latrines are in use or not, as a marker that distinguishes those with power and privilege (O'Reilly, Dhanju, & Louis, 2016). We argue that an over-focus on the "unwillingness" of the rural poor to pay for low-cost latrines, misses how poverty and shabby latrines set them apart socially from others. The role that sanitation plays in maintaining unequal social relationships has received much more attention in urban studies than rural studies; this paper seeks to close that gap.

Efforts to decouple poverty and sanitation divorce the lived realities of poor communities from the structural causes of poverty. In rural Benin, Gross and Günther (2014) found that household wealth, as measured by an asset index, and off-farm income of the household head was positively associated with latrine ownership and usage. They concluded that for poor rural households, improved housing and some furniture was needed before a household would invest in a latrine. Given the role of poverty at the household scale, and remoteness at the community scale, they concluded that economic growth in remote and poor villages is a necessary first step toward sanitation adoption. Curtailing OD begins with linking poverty with political powerlessness and state neglect represented by absent infrastructure. In rural areas, unimproved roads or the absence of roads is primary.

(c) *Roads*

Research in Sub-Saharan Africa has been clear on the significance of state-supported infrastructure for latrine adoption. Gross and Günther (2014) found, in rural Benin, that households with latrines were: located in large villages that had access to electricity, paved roads, schools, and had experienced a sanitation intervention. Of these characteristics, access to a paved road was the *only* factor that correlated positively with owning a latrine. Access to a paved road can facilitate: cost reductions and increased availability of materials; increased access to new technology and urban, modern lifestyles; and improved knowledge of latrines. Put in opposite terms, populations with limited access to materials and information required to build, maintain, and use latrines have associated low levels of toilet building and usage, even though they may be motivated (Jenkins & Scott, 2007; O'Connell, 2014; Clarke *et al.*, 2014). Jenkins and Cairncross (2010) recommended that large villages in rural Benin that were agricultural hubs would be more responsive targets for demand promotion approaches, whereas remote villages had more basic need of roads, water, and education than sanitation (see also Mara, Lane, Scott, & Trouba, 2010). UK villagers spoke very little about education, some about water in relationship to latrines and seasonal difficulties, and quite a lot about the power of roads to improve their lives.

(d) *Pits*

We heard above that villagers were aware of infrastructure like sewerage in cities and they discussed this relative to their desire for large pits that would not fill up in their lifetimes (see also Coffey *et al.*, 2014; O'Reilly & Louis, 2014). Respondents

did not want "filth" near the house; a pit large enough that it would not fill would keep "filth" at sufficient distance. Remoteness as social distance could be partially overcome by a solution that came close to how feces "disappeared" in cities.

The isolation of UK villages kept NGOs with knowledge of sustainable sanitation at bay; it kept practically *all* NGOs at bay. Compared to other field sites of the authors, UK villages were notable for the absence of slogans, chatter about current schemes, or mention of NGOs. Remoteness contributed to uncertainty about how pits could be emptied. O'Reilly and Louis (2014) found that when NGOs in West Bengal taught villagers how to empty their pits themselves, or provided slabs that could be moved to cover a newly dug pit, latrine usage was sustained. Even though pits were neither deep nor wide (due to soil conditions and high water tables), the impossibility of accessing a sludge removal service did not constrain villagers' decisions about using latrines. They emptied them or moved them when pits filled. [4] A successful sanitation intervention at the current moment in the Himalayan foothills would require digging large pits in households where there was sufficient space to do so, teaching people to empty their own pits, or taking advantage of well-draining soils so that pits could be smaller and have the desired longevity.

(e) *Water*

The necessity of water for latrine uptake is a matter of debate. On one side is research indicating that water is not associated with having or using a latrine. Gross and Günther (2014) found no statistical correlation between access to an improved water supply and presence (and use) of a household latrine in rural Benin. In Coffey *et al.*'s (2014) qualitative research in rural north India, out of 99 interviews, water was not mentioned as a constraint on latrine usage. From a grounded theory perspective, not mentioning water across the interviews was an indication that it was not significant (i.e., it is not the same indicator as the interviewer asking if water mattered, and the respondent saying it did not). On another side is research offering evidence that water does matter, particularly as it relates to access to water for flushing and bathing (Routray *et al.*, 2015). In this critical sanitation research, access to water is examined as a relationship of power in which not all groups have equal access or equal needs. In a study of constraints on latrine adoption in rural Odisha (India), caste-based, post-defecation bathing practices meant upper caste groups required more water—over 24 L or two buckets—than lower caste groups whose bathing practices were far less stringent. For both groups, a lack of running water in latrines limited uptake. Upper castes needed more water than they wanted to haul, and lowest caste groups, who already had less access to water than upper castes, found defecating outdoors more practical (Routray *et al.*, 2015). Where water was abundant year round, quantities of water necessary for ritual, post-defecation bathing did not hinder latrine usage (O'Reilly & Louis, 2014).

Ideal latrines had water and space for post-defecation hygiene. Eleven of 19 households had water in their latrines; two of these did not have taps, i.e., water had to be hauled to the latrine (see Table 1). All households, regardless of water availability, went for OD at some time. Seasonal water shortages meant that having a water connection did not mean there was water in the tap. The task of hauling water discouraged villagers from building or using latrines, but most importantly, livelihoods meant that latrines of any kind were not used year round, reflecting lack of demand. Our ethnography indicates that multi-scalar political will to coordinate and invest in remote villages' water supply would be a necessary step to encouraging latrine usage, but would not eradicate OD.

(f) *Political will*

At the scale of a village, political will played a primary role in facilitating latrine uptake in the Maharashtrian village, Sarola, to win a national Clean Village Award (Dhaktode, 2014). Dhaktode (2014) attributed Sarola's success not to education, as in simple literacy, but to knowledge of government schemes like the cash award and subsidies. Poor SC households were asked to contribute the sum they would ordinarily give to an SC-specific holiday event, and subsidies, including individual cash donations from village leaders, were added to enable all SC households to build (see also O'Reilly & Louis, 2014). Informal SC leaders mobilized the SC community. It took the formal leadership to pressure the general caste group to join the effort begun by SCs (see also Lamba & Spears, 2013). Formal village leaders used decentralized government funds to support the effort, and used their political clout to override the social distance created by caste hierarchies.

Like the UK villages, Sarola was small, poor, primarily agricultural, and had only a primary school. Unlike the UK villages, many earned an income through nearby construction jobs, and the village was mostly SC, but they were not the politically dominant group. In many ways, Sarola exhibited how remoteness might be addressed, although Dhaktode (2014) did not explore how nonremote characteristics—off-farm income availability and road connections to nearby towns—influenced the sanitation drive. UK villagers were well-connected enough to be aware of urban sanitation amenities and the discrepancy between government investment in rural and urban infrastructure. Remarks about corruption "eating" money earmarked for entitlements indicated political disenfranchisement—feelings of anger and powerlessness to influence the state due to social distance.

Political will for improving sanitation requires the involvement of the state (Black & Fawcett, 2008). Similarly, McFarlane (2014, online) asserts that government must be held accountable in "its capacity to provide this most fundamental of bodily requirements…" However, the infrastructural components of rural development are cost-effective and convenient for the state to deliver in rural places that already have access to markets, infrastructure, and human resources (cf. Partridge & Rickman, 2008). Remote areas are left to languish because of the high cost of infrastructure development and the governance challenges posed by physical distance. In places with short political cycles like India, the remote poor are "expensive to deal with […] within electoral periods," thus they remain remote and poor (Bird *et al.*, 2002, p. 2).

We want to push our framework of remoteness further by suggesting that the relationship between remoteness and sanitation has traction in places that do not have an explicit element of physical distance. The urban poor and middle class live side by side in Indian cities, and yet social distance is extreme, and contributes to continuing sanitation poverty. As O'Reilly and Louis (2014) found in West Bengal and Himachal Pradesh, even in places of nearly 100% latrine usage, there remained social marginal households (e.g., widows, tribals) on the village outskirts that did not have latrines. It is well-known that sanitation information does not reach all social groups, especially women. Open defecation rests on social inequalities that manifest in different forms and different places; remoteness captures these socio-spatial relationships.

7. CONCLUSION

In this paper we have made three arguments. First, the specific socio-spatial relationships of rural places should be explored and explained, not taken as given. Details of study sites will help, as will attention to the meanings of these details for people's everyday lives, including their sanitation practices. Second, remote places are different than other rural places due to physical and social distance. Given the compelling findings of research on remote places elsewhere, Indian sanitation research must recognize social relationships of unequal power that *produce* remoteness. We have presented evidence of an area of Uttarakhand where an unequal distribution of power over space has created remote communities and excluded them from access to infrastructure, information, and income. Third, the structural inequalities that produce remoteness are deeply intertwined with practices of open defecation and limited sanitation uptake. Thus we advocate a move away from explanations of OD and approaches to curtailing it that focus on individual behaviors, and toward understandings and solutions focused on political and social change.

To date there is little scholarship that engages deeply with the connection between geography, poverty, access to basic services, and open defecation. Critical sanitation research calls to question the reasons for poverty. Critical urban research ties sanitation poverty to lack of political and social capital that leaves the poor with little leverage to demand government services or to circumvent elite capture of existing resources (Chaplin, 1999; McFarlane, 2014). Critical rural research ties sanitation poverty similarly to weak governance and the limited ability of the poor to access the resources necessary to build and use latrines. We found that the impacts of remoteness crosscut the categories of wealth and poverty. We do not argue that quality of life, health, and comfort are on par along the spectrum of rich and poor, but all households, to varying degrees, were impacted by poor roads and connectivity, unreliable water supply, and social distance.

Our ethnography shows that poverty was not a blanket experience of all those who practiced OD. Wealthier villagers in rural remote Uttarakhand could afford to build toilets, and used them selectively. By their own accounts, the convenience of OD when practicing agriculture or transhumance made more sense. A few poor households (3 of 70), built with support from subsidies, and did not always use them because the convenience of OD when practicing agriculture or transhumance made more sense. Remoteness makes OD more convenient than using a latrine in light of the obstacles of limited access to materials, fears of pit filling, and lack of a reliable water supply. There is a limit to OD's convenience however, especially when guests or family members from outside the village come to stay.

Key to sustained OD despite interventions in all study sites were the ways that livelihood and remoteness went hand in hand: 1) outdoor livelihoods that kept villagers away from home; 2) a familiarity and comfort with the outdoors; 3) limited contact with urban centers; and 4) lack of social pressure. These elements may appear straightforward, but they can be seen in a new way through the lens of remoteness. Each of them attaches to structural inequalities that produce socially and physically distant communities. Conceptually, remoteness may be the appropriate frame for a critical analysis of OD in rural places and urban spaces by drawing attention to the complex processes behind sanitation poverty. Our intention has not been to draw a stark contrast between the rural and the remote, but to broaden examination of the role structural inequalities across space play in sanitation poverty.

The implications of this research for policy are clear. Overcoming socio-spatial inequalities that produce physical distance and social distance should be a priority. Infrastructure development, especially reliable roads, will address a fundamental concern of remote communities that practice OD. Roads can facilitate latrine uptake through flows of information and technology, water and sanitation interventions, reduced costs of materials and labor, and exposure to urban lifestyles. Reliable water supply, supported by good governance, can sustain latrine usage by insuring that latrines can be cleaned, flushed, and provide a private place for post-defecation hygiene.[5] Agricultural livelihoods mean that OD will remain convenient, but addressing remote communities' basic needs for water, health care, and education—indeed, their entitlements as Indian citizens—will reduce the socio-spatial inequalities that also sustain OD.

The power of the concept of remoteness is that it shifts the focus from individual decisions to the multiscalar economic, political, and environmental factors affecting rural dwellers. It suggests solutions like the state and NGOs playing key roles supporting a reduction in physical and social distance. While we believe that it is the responsibility of the state to provide infrastructure, we do not assert that an end to remoteness simply will put an end to OD. Greater connectivity will, however, reduce physical and social distance by linking remote populations to wider cultural and economic trends.

As states strive to meet the new Sustainable Development Goals for sanitation, programing will extend further geographically, and with renewed vigor, than ever before. This research provides insights into the factors that sustain OD in remote places, while encouraging new ways of thinking about the prevalence of OD in places that are not.

NOTES

1. "Backward district" is an official term used by the Government of India to define the economically, socially, and geographically marginalized districts across India experiencing rampant poverty due to violent conflict, poor governance, or lack of natural resources.

2. For easier reading, from here forward we use only the US dollar amount in the text.

3. The farmers were reticent about naming prices and markets, perhaps because they also traded in opium.

4. Ex-untouchables are those who perform traditional caste work of cleaning up and removing human waste. While legally no longer untouchable, some communities continue to do this work. The possibility of hiring an ex-untouchable to empty the latrine pit was never mentioned in UK interviews, either as a lack of someone to clean up or as a group of people who would. See O'Reilly et al. (2016), and Coffey *et al.* (2015) on the role of caste relations in sanitation uptake.

5. While the Indian Census (Census of India, 2011) reports that 78% of rural Indians have water in or near their premises, that figure does not assess the reliability of water supply. Furthermore, it means that 22% of rural Indians do not have access to water nearby.

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