



PRESSURE: The PoliTechnics of Water Supply in Mumbai

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Now there is a [state] policy regulation for water that we are bound by. Those structures prior to January 1995 are eligible for basic amenities. We are allowed . . . supposed to give water to them. Those [who have unauthorized structures built] after that date also get water. They make arrangements to take connections, forge ration cards and do such things to get them. . . . In slums our policy is to give water connections to federations of 15 employees. We bring the connection to them, and their secretary is responsible for bill collection maintenance, bill payment, etc. If the population is at higher elevations, then we provide them with a suction pump and infrastructure at the bottom, and make them responsible for its operation and maintenance. The total revenue of the department is Rs. 1480 crores, of which Rs. 800 crore is the profit.¹ It is the only public utility with such performance. The slum dwellers are good paymasters. The government is not. Central, state governments are difficult. So this is the summary. You have questions?

—Patkar, Engineer, Water Department, Mumbai, September 14, 2007²

Early in my fieldwork, I talked with Patkar, a senior hydraulic engineer at the headquarters of Mumbai's water supply department. I asked him to tell me about the city's water system, particularly as it pertained to slum dwellers. Experienced in talking with reporters and researchers about the city's water supply, Patkar told me about the quantities of the city's system—its lakes, pipes, scarcities, and

topographies. As he started to tell me about the ways in which settlers access water,³ however, his narrative shifted to incorporate the language of incomplete entitlements and differentiated state policies. This slippage, enacted in the gap between what state technocrats are supposed to do and what they are allowed to do, reveals the flexibility and contingency that settlers are subject to when accessing water in the city. Even though city water rules allow only certain settlers (settled prior to 1995) to access the system legally, Patkar is aware that nearly all settlers access some municipal water. Patkar takes care to point out that the circumscribed legitimacy of settlers in accessing water is not based on their inability to pay water bills in Mumbai, nor is it because the city water utility lacks the funds or the expertise to invest in network improvements to the city's settlements. The degree to which settlers (currently comprising 60 percent of Mumbai's population) can access water depends instead on politically mediated cutoff dates and physically mediated topographies, on pumps and secretaries, and on department policies and the tacit ways in which these can be circumvented.

Following Patkar's recognition of the ways in which politics, technology, and physics simultaneously configure Mumbai's water supply, in this article, I suggest that "pressure" might be a useful analytic to understand how settlers claim water in Mumbai. You need pressure to make water flow. To get water, settlers and engineers need to make different kinds of pressure. Pressure can be mobilized by using pumps or politicians, and access to the technologies of pressure is mediated as much by capital as by social connections. To understand the importance of pressure is to recognize that water is accessed by enabling both physical and social relations, and water supply can be curtailed as much by politics as by topography. The different ways of making pressure—and the social and natural relations they entail—elucidate the ways in which diverse groups are able to settle the city.

Based on 22 months of ethnographic fieldwork between a settlement in northern Mumbai and the field offices of the city water department, in this article I seek to draw together literatures in political ecology and citizenship so as to theorize how cities are made livable, inhabited, and claimed. By focusing on how settlers access water in Mumbai, I wish to make two points. First, I seek to move beyond binary theorizations of haves and have-nots that are commonplace in writings about cities, especially those in the global south (Davis 2006; Harvey 2008). Both in scholarly and in popular literature, Mumbai has frequently been thought of (and measured) in binary terms—those who have more than they can ever need and others who have desperately little to live on (Banerjee-Guha 2009; Human

Development Report 2009). This political economic narrative is a simplification. As both proponents and critics of this narrative will point out, things are more complex on the ground. In urging that we think beyond this narrative, I do not wish to suggest that inequality is not a trenchant problem. Instead I suggest it is important to move beyond this narrative for both theoretical and political reasons. As feminist geographers have pointed out, dualistic narratives are constitutive of capitalism and make few resources available to those that are marginalized by them, save that of revolutionary collective action (Gibson-Graham 1996; Hart 2002; see also Chakrabarty 2000). Furthermore, political economic narratives have been unable to show how, despite tremendous odds, those marginalized by the state and the market actually make their homes and stay in them through what Asef Bayat calls “the quiet encroachment of the ordinary” (Bayat 1997:61; see also Ghannam 2002).

After three decades of settlement, life is less precarious than it was previously for many living in Mumbai’s older settlements. Many residents no longer identify themselves as “poor.” How have certain settlers established themselves in the city? Which settlers are able to establish themselves in the city? Here, I think through these questions by paying attention to the ways in which they access water.

Second, I focus on how settlers pressure the water system to draw attention to the materiality of water and the ways in which water is drawn into and exceeds political formations. Recent work in urban geography has focused on the hydrosocial cycle of urban water systems (Gandy 2002; Kaika 2005; McFarlane 2008; Swyngedouw 2004). Drawing Haraway and Harvey into a productive conversation, Kaika suggests that we need to denaturalize “fetishized relations of production and the hidden material networks and flows that urbanize nature” (Kaika 2005:5). This approach has been tremendously valuable in demonstrating how cities are implicated in networks of environmental, political, and social relations that always exceed their geographies (Gandy 2002; see also Cronon 1991). As water is transmitted to and distributed through the city, it produces regimes of management and marginalization (Swyngedouw 2004). Nevertheless, while this approach has illuminated the power necessary to produce and draw water into the city, it has had less to say about quotidian practices and the “microspheres of negotiation” through which settlers in the city access water (Gandy 2008:125). It also says little about how and why the materiality of water itself is critical to its political formations (see Larkin 2008; Latour 2004; Mitchell 2002).

As thousands of city employees work hard to move water through many miles of pipes and into urban homes, water is not easily controlled in this technopolitical system; it leaks and disappears. In drawing attention to the corporality of water, I seek to make a contribution to the scholarship in political ecology and science studies, in which scholars have urged us to avoid treating nature as a passive substrate on which politics acts (Bennet 2010; Forsyth 2003; Mitchell 2002; Vayda and Walters 1999). As Barry points out, a materialist analysis of politics is one that “must attend to the resistance of matter to political control” (Barry 2001:26). Focusing on pressure in particular, I try to show how water is figured not only by particular technopolitical formations but also by the ways in which it exceeds politics and destabilizes its distribution regimes.

Through manipulations of pressure, water is made available to diverse social groups. Not only do these practices enable settlers to live in the city but also effect what I call hydraulic citizenship: a form of belonging to the city enabled by social and material claims made to the city’s water infrastructure. Produced in a field that is social and physical, hydraulic citizenship is born out of diverse articulations between the technologies of politics (enabled by laws, politicians, and patrons) and the politics of technology (enabled by plumbing, pipes, and pumps). It depends on the fickle and changing flows of water, the social relations through which everyday political claims are recognized, and the materials that enable urban residents to connect to and receive reliable water from the urban system. As settlers and other residents constantly evaluate and respond to the dynamic flow of water in the city, these connections both elucidate and differentiate the ways in which settlers are able to claim and live in the city.

By drawing attention to the ways in which hydraulic citizenship is made through personal, political, and material claims on the city infrastructure, I show that the public realm isn’t “denuded” (Gandy 2008) but is saturated with diverse social and political claims that exceed the frameworks of liberal, modern citizenship. Mobilizing electoral politics, settlers pressure state bureaucracies and make them respond to their needs. They modify pipes and pumps, sometimes with the support of city officers, and sometimes despite their sanctions, to make resilient and powerful settlements in the city (Benjamin 2005; Sundaram 2010). Drawing on Scott’s (1990) articulation of “infrapolitics,” I suggest that these practices are not merely coping strategies, nor are they prepolitical. They critically compromise the authority of city engineers and other technocrats to control the system, and they are central to understanding the workings of the contemporary urban hydraulic system in cities like Mumbai.

In Mumbai, upper- and middle-class residents access water through property developers, who hire consultants, experts, and liaisons to “convince” city officials to sanction large and reliable water connections to their developments prior to their occupation. In contrast, the homes of settlers are not constructed following the city’s formal approval process. They are recognized as being eligible for municipal services only a decade or so after their construction, after they are deemed to be critical to the electoral successes of political representatives, and after they have been functionally administered by *dadas* (big men) for several years (Hansen 2001).

Therefore, I begin by showing how settlers access water from the public system. Through processes of incremental and differentiated citizenship, qualified settlers are required to substantiate applications for water connections with a formidable set of documents to prove their residence. Because this coterie of documents—described below—is difficult to assemble, settlers do not approach the water office directly but instead approach city representatives for “help” in getting water connections. As they mobilize diverse relations with democratically elected representatives, *dadas*, and social workers to access water, settlers constitute themselves as citizens and subjects of the city.

In a critical and influential formulation, Partha Chatterjee identifies these practices as characteristic of what he calls “political society.” Settlers “make their claims on government, and in turn are governed, not within the framework of stable constitutionally defined rights and laws, but rather through temporary, contextual and unstable arrangements arrived at through direct political negotiations” (Chatterjee 2008:57). Chatterjee suggests that it is through moral and political claims made as a population on the sensibilities of leaders and city officials that settlers get access to water.

As I show in this article, settlers try and engage both civil and political relations to get water. Yet, not all settlers in Mumbai are able to access water reliably from the city administration, whether through political society mobilizations or citizenship claims. In the final section of this article, I focus on the ways in which certain settlers in the settlement of Premnagar are unable to receive water with reasonable pressure. Pressure’s absence reveals much about how it is made. Focusing on how water engineers do not attend to the water needs of Premnagar’s residents, I describe why they are unable to constitute themselves as a deserving political society. In so doing, not only do I wish to point to the limits of political society but I also want to describe the multiple ways in which some settlers are able to survive in the city despite the absence of municipal water pressure. The diverse ways in

which they access water—through illegal connections and subterranean flow—point to how water is not entirely encompassed by powerful political regimes and also to the multiple ways in which diverse settlers are able to manage and establish themselves in the city.

POLITICAL TECHNOLOGIES

Mumbai's water supply department was founded in 1860, when the colonial government responded to a debilitating drought by designing and constructing dams beyond the boundaries of the island city. From its earliest days, the water supply system of the city was limited and not adequate to serve all residents of the city. Colonial officials and their elite municipal council sought to extend water networks only to a limited population—typically the wealthier classes and British subjects (Dossal 1991).⁴ This approach of “salutary neglect” left large sections of the city's population out of biopolitical systems of government and put them in the sovereign control of “customary leaders,” whose primary function was to ensure their populations did not disturb the law and order of the city (Chandavarkar 2007; Hazareesingh 2000). Working beyond the regimes of liberal government since the colonial era, *dadas* have managed these areas as patrons, disciplining them with discretionary resources and violence (Hansen 2005). In the absence of suffrage and citizenship rights, settlers had few resources in colonial times to demand water and other urban infrastructure (Chandavarkar 2007).

The expansion of national political citizenship in the postcolonial period, exercised by settlers by voting in elections, has steadily reconfigured relationships between *dadas* and their local populations, for whom they have always been a vital link in accessing urban resources. Because settlers are critical to the electoral success of political parties, the city's dominant political outfits have worked to bring the services of the state (water, electricity, hospitals, schools) to settlements in a highly visible manner. They often do this by supporting, and seeking the support of *dadas* and other leaders in the settlements. This is accomplished not only by working to accommodate their ad hoc demands for the state's resources but also by nominating them to run on party tickets in city and state elections (Hansen 2005).

I got a better sense of these processes while conducting fieldwork in Mumbai. On a wet July afternoon, I arrived at the house of Rané, a leader of one of the more prominent women's groups in a settlement that was approximately 25 years old. Rané had a well-appointed house. It was clean and neat, painted in pink, with floor tiles. The room where we talked was well lit and ventilated. I was introduced to

her three-year-old, who was watching a television that was flanked by a fish tank on one side and a cluster of dolls with blond hair and blue eyes on the other. Rané's husband worked as a clerk in a municipal office, a reliable job that guaranteed them a degree of financial stability. For many years, Rané had led a women's group in the settlement that was strongly affiliated with the women's wing of the Shiv Sena.⁵ Like other groups in the area, the group appeared to have been more active in times past. Now, group members met twice a year, primarily around the Ganpati festival to collect donations to host the festival and at the beginning of the academic year to distribute schoolbooks donated by the Shiv Sena.

In response to my initial question about the settlement's history, Rané began her narrative the way many settlers did. Without a trace of nostalgia, she told me of their water difficulties in the early 1980s, when no councilors would pay any attention to them. They would get water from the well. Soon after, they began going to the nearby cemetery to buy municipal water from the caretaker at 10p a *handa* (vessel). As the price of water rose to Re. 1 per *handa*,⁶ they decided to petition a political leader for help.

A Congress MLA [state legislator of the Congress Party] helped us. . . . He provided a two-inch line at first, but soon after, the pressure wasn't there. People began making holes in the ground (*gaddha*) for water when the public standpost no longer gave enough water. Then later, Tendulkar [a Sena city councillor] came [to power in the municipal council]. He put in a nine-inch line, which also was good for a while before it no longer gave pressure. We have complained several times to the BMC [Municipal Corporation of Greater Mumbai] about this. They have our names there. Our name is in the complaint register . . . but whenever we complain they say that because we live on a hill, we have a problem. . . . Now there is a morning and an evening line. The morning line was brought by Tendulkar, and some people have formed groups to get water from [his line]. Others are hesitant, because after paying, and waking up at seven at least there should be water there. Oftentimes there is no water in the morning line. People have paid plumbers to put Ts on that line as well, and take water without paying, without a meter.

I was impressed by Rané's technopolitical knowledge of the water system. Like other settlers she knew the water network in the settlement well. From buying water by the *handa* to getting municipal water from a line installed by the politician, Rané's story describes the process by which the state has extended itself into the settlement over the last two decades via the work of its elected representatives.

Like many others, she focused on the vagaries of water “pressure” (using the English word) as her main problem. When there is little pressure in municipal pipes, settlers were unable to collect enough water in the little time they had. Rané suggested that in those situations, settlers survived by drawing water from markets, wells, ditches, plumbers and by exerting pressure on politicians.

Rané named each new pipe after a particular elected official. Indeed, in recent years, city and state representatives have spent a significant portion of their local area development funds on extending the city’s water system into the settlements, making sure that infrastructural developments they commission in the settlements conspicuously bear their names. As city councilors have become personally involved in the administration of water in the settlement, many areas now have better access to water than before.

The work of councilors stands in marked contrast to the work of the municipal administration, whose projects are frequently invisible and less known, particularly in the settlements. Nevertheless, as Rané indicates, access to water remains precarious, and taps frequently stop working after a few years of service. Votes, evidently, aren’t sufficient to guarantee hydraulic citizenship in Mumbai. Hydraulic citizenship, realized by the receipt of pressured water from municipal pipes, also depends on the legal histories of the settlement, the city’s water network, and the work of its engineers.

In part, Rané’s vulnerability to the vagaries of water pressure draws on longer histories of exclusion and marginalization embedded in the city’s legal and policy regimes. Although they have been made more inclusive over the years, the city’s rules continue to restrict the ways in which settlers can legitimately claim the city’s water. Today, certain settlers can form a group and apply for “standpost connections,” per the city’s water rules.⁷ If their applications are approved, settlers can hire licensed plumbers to make the connections from their homes to the nearest service main at their own cost. According to city water rules, settlers are sanctioned pipes ranging from half an inch to an inch in diameter. Because service mains are often located at some distance from settlers’ homes, these slender pipes often travel great distances to settlers’ homes. Because pipes also run above ground, they are vulnerable to breaking, leaking, or getting blocked every few years.

Further, not all settlers are able to apply for standpost connections. Only settlers who can prove that they occupied their settlements before January 1995 can apply for water services.⁸ To do this, they need to distinguish themselves from

other settlers, by providing an extraordinary set of documents while applying for a water connection. These are:

1. An application form for a new connection;
2. A resolution/memorandum issued by settlers declaring a new (water) society, with a secretary in charge of collecting and paying dues;
3. A list of “members” with their ration card numbers in one column and their electoral ID numbers in another, “verified” by the junior engineer;
4. Supporting documentation that includes copies of every member’s (food) ration card and a copy of the 1995 electoral roll, with each of their names highlighted; each page must be certified as a true copy by the junior engineer;
5. A receipt that Rs. 200 has been paid to the BMC for “scrutinizing” the application; and
6. A certification nominating a licensed plumber to do the pipe laying.

Although the revised water rules provide a means for millions of settlers to apply formally for water connections, the complexity of the process renders it almost impossible for settlers to do so directly at the water department. For instance, it is not easy to find the required 1995 voter list. Further, every application tacitly requires a letter of support from a politician, “requesting” that the application be approved. Thus, despite changes in the water rules that allow settlers to get formal connections to water supply, it is difficult to get a water connection approved in a timely manner without the support of a councillor or legislator.

Hansen and Verkaaik have directed our attention to charismatic figures like councilors and plumbers, urban specialists who “by virtue of their reputation, skills and imputed connections provide services, connectivity and knowledge to ordinary dwellers in slums and popular neighborhoods” (Hansen and Verkaaik 2009:16). Indeed, settlements are filled with specialists offering their services as “brokers” to navigate settlers to access different state services. Here, however, I wish to point to the ways that the laws, rules, and policies of municipal government are themselves critical to the authority of urban specialists (see also Gupta and Sharma 2006). The various requirements of the application form for a new water connections are designed to turn people away from directly accessing water as substantive citizens and instead to direct them to seek the support and help of the system’s experts—specific councilors and their plumbers. The official water application procedure produces the discretionary power of councilors and other charismatic leaders in the settlement. Straddling the boundaries of the (in)formal and (il)legal, councilors

are able to reinscribe their power in their settlements by mediating and facilitating access to the procedures of government.

Talking to me at his office in a public bank, Surve, a Shiv Sena leader, explained the system to me. I asked why settlers and their plumbers didn't go to the water authority directly. Why did they first stop by the party office? He replied:

Here the plumbers know that in the final instance you need a councillor's letter. The procedure has been *made* in the BMC [procedure BMC *mein bana diya*]. The BMC can sanction water connections without the councillor or the Shakha Pramukh [the head of the Shiv Sena's branch office]. But if they give it, then they won't get any *maal* [stuff, colloq. for money] in the middle. So they have made a "system" [English usage]. The system is that you tell the councillor or political party member [you want a water connection]. That way, the local councillor is respected, he will get *maal*. [Otherwise he will object, saying,] If you give it direct, what will my position be here [in the settlement]? There is an understanding—that if you do this, like this, things will come in this way. The system. So people say instead of [having to come] eventually to the councillor, let's do it first. So the system—of ration cards, forms, etc.—these are all *procedures*, so [that] people say it's better to go to the councillor. It's the system. Some people say it's about the money. There is the money, but that is not the only thing going on.

Following "recognition" of their homes, settlers are expected to connect to the water system without councilors calling in favors. But as Surve argues, this is not how the public system has been made. It, too, requires personal networks of legitimation and endorsement to move application documents through the bureaucracy (Hull 2003). Therefore, even after urban residents achieve state recognition after years of delicate clientelism, popular voting, and social mobilization, their relations with councillor-dadas and their political parties continue to play a significant role, particularly around water supply.

As I show later in this article, the relations between settlers and councilors are unstable, complex, and multiply constituted. Nevertheless, in virtually every settlement of the city, water plays a critical role mediating the relationship between the government and the governed. Settlers see the provision of water as a fundamental responsibility of the government, and elected representatives are often evaluated and reelected based on their success at extending urban infrastructure (water, electricity, and roads) into their settlements. With the parameters of their success so defined, councilors intervene in and make themselves necessary to the

technopolitics of the city's water supply. They frequently demand that engineers divert more water to their wards. They "help" both recognized and unrecognized settlers in applying for water connections. If settlers can claim tenancy prior to the cutoff date, councilors write letters of support on settlers' behalf, to strengthen their applications. If settlers do not have the necessary documents, councilors organize forged copies, to send along with letters for a price. Thus, while the legality of settlers matters, as does their ability to pay for connections, it is their relationship with councilors and other charismatic leaders in the settlement that enables their access to the public system.

Councilors are a critical locus of authority in the municipal water system, particularly for settlers. In mediating the demands of settlers, they do important screening work for the overworked engineers of the water department. In turn, they need engineers to validate their requests. Councilors would frequently speak to me about the skill and technique that were required to "take work out of the BMC." Yet, engineers do not merely respond to councilors out of goodwill. They also depend on councilors to approve their requests, applications, and tenders for a range of works projects—water pipelines, roads, sewage networks, and so on. Councilors and political party workers can also mobilize large groups of protestors to heckle or intimidate engineers, or to vandalize their offices.⁹ As such, engineers need to ensure that they do not unduly upset councilors or deny their requests on the basis of rules. To ensure that the councilors' concerns are addressed, city engineers are delegated to "take care" of the problems of designated councilors, even if these requests do not always adhere to municipal policies.

For instance, engineers are only too aware of the ways in which councilors manipulate documentation. A former chief engineer told me that the water department had been compelled by politicians and administrators "not to go into depth [to verify the authenticity] of every application." As long as engineers can maintain ignorance about an application's illegitimacy, they cannot be accused of violating the state's law. They therefore deploy ignorance as a technology of government. Knowing not to know particular violations of the city's water rules allows the city's rules to remain unchallenged, even as it permits engineers to remain open to allowing profitable, political, and sympathetic systems of access for the urban poor.

City engineers, however, are not in a position to accede to every councilor's demands. Receiving only a limited quantity of water to distribute in their wards, they are unable to give every ward more water with more pressure. If a councillor or his constituency pressures engineers to deliver more water, the engineer can only do

so if he reallocates the water from a different neighborhood.¹⁰ Unable to respond to the demands of all councilors at once, engineers are constantly subject to the verbal abuse of councilors who demand quick responses to their mutually incompatible requests. Simultaneously responsible to satiate the councilors' relentless taunts and demands for more water and also to manage the department's limited water allocation, field engineers have the unenviable task of negotiating the different pressures of the hydraulic system. In their effort to cope with these demands, they often reallocate water from areas of low political pressure to areas of higher pressure, constantly making adjustments until people stop shouting.

With the water system therefore continuously in flux, settlers need to maintain pressure on the city water department to continue to receive water. In this section, I have focused on the most common way of mobilizing pressure—through representations and delegations made through councilors. Pressure can also be mobilized in other ways—through large protests at the offices of the water department or by words written in an official complaint register. These different repertoires through which pressure can be exerted are very familiar to settlers like Rané. To get water, settlers like Rané deploy diverse tactics of making pressure. Yet in so doing, they also depend on city engineers to recognize the legitimacy of their claims.

However, not all settlers in Mumbai are able to mobilize as political society or through heterogenous claims of citizenship to access reliable water from the city. As engineers try to deliver water with more pressure than there is in the system, they are compelled to prioritize some localities over others. Focusing on the ways in which engineers ignore hydraulic works projects in a neighboring settlement, I next describe how and why its residents are unable to constitute themselves as a deserving political society. In so doing, not only do I wish to point to the limits of political society but I also want to describe the multiple ways in which settlers are able to survive in the city despite the absence of municipal water pressure.

SOCIAL GRAVITY

Premnagar is one of Jogeshwari's older settlements. Approximately 40 years old, it precedes many of the settlements that lie on the other side of a 20-foot-wide road. Unlike Meghwadi, which is populated primarily by Marathi Hindus, Premnagar is primarily settled by Muslims. These two settlements are drawn together through cycles of violence that interpellate categories of religion, landholding, and regional belonging. Although I am unable to review this history here, it is sufficient to point out that where Meghwadi's residents receive water with good pressure for a few hours a day, just meters away in Premnagar

residents complain of an unreliable city supply, both in terms of its duration and pressure.

When I initially spoke with engineers about Premnagar's water problems, they explained them in geophysical terms: It was located on a hill that water could not climb up. Like other municipal engineers, Mumbai's engineers would present their work in technocratic and not political terms, "structured primarily by natural principles . . . where pressure, scale, size and distance are presented as natural 'givens'—universal imperatives, free of history—and invoked to explain the limits and parameters within which the service must operate" (Coelho 2006:497).

Indeed, water supply is more difficult for settlers who live in hilly parts of the city. In the absence of pumping, water does not climb as easily to homes in hilly areas. Settlers in hilly areas and those living in the city's high-rises alike are susceptible to pressure fluctuations as a consequence of their living at higher elevations. Instead of working to overcome the challenges of gravity for settlers, the water department provides water to many settlements at the bottom of the hill (see Patkar's epigraph). It is then the responsibility of the settlers to purchase, install, and maintain pumps and pipes from this point to their homes. In several different parts of the city, settlers pay heavy costs to receive water in this way, and they are responsible not only for municipal water bills but also for payments made to plumbers and various intermediaries who operate the pumps and pipes that bring water up to the settlement. Such arrangements, where the "last mile" of service is privately managed by powerful leaders, are characteristic of settlements, where engineers and planners are reticent to extend the public system.

In Premnagar, however, there are no public or privately operated pumps at the base of the hill. Residents simply receive water with very low pressure. When I asked engineers why the city didn't install or operate pumps for settlers, they told me that the electricity costs of pumping alone made this an unviable proposition. But "viability" is an effect of power. In the century and a half since it was established, the department has always pumped water up Malabar Hill, to the homes of the city's economically and politically powerful. In Mumbai as in other cities (like Los Angeles; see Davis 1998), public systems respond at least as much to considerations of class as they do to those of topography, where the costs of providing public services matters less if citizens are wealthy than if they are poor.

It was quite late in my fieldwork that I came to learn that the BMC did in fact install and operate pumps for some settlements. The municipal corporation had installed a pump on one of the two water lines taking water up to Banjrekar Wadi,

another settlement on a hill whose residents were primarily Marathi-Hindu. Thus, in certain cases, settlers did compel the municipal corporation to install and operate pumps on their water lines. The settlers of Premnagar, however, located a couple of miles from Banjrekar Wadi, did not benefit from any municipal pumps. I found this surprising. In the graduated legality of settlements in Mumbai, Premnagar, an older settlement, is more legal than Banjrekar Wadi. According to the law, it should be receiving better water. Yet, it does not.

I asked Kerkar, an engineer in the maintenance department, why this was so. He took care to differentiate between the people that lived in each settlement.

Our people [those in Banjrekar Wadi] are from the village. They get jobs in the city, work, and are very particular about keeping the area clean. Meanwhile, *their people* are from outside. They come and want to stay in Premnagar only. They don't go outside. They will live in dirty conditions, no problem. When we do work in Banjrekar Wadi, people see us doing something good for the area, and they are helping [us do the work]. They are taking care of the area. In Premnagar, people see us doing something and start to fight. If we do [public] works, it's more of a problem. . . . It's better to do nothing at all.

By elucidating the reasons that Premnagar is excluded from pumping services, Kerkar drew attention to the quotidian understandings of belonging and service delivery that have little to do with class or property claims. Kerkar recognized the Marathi settlers of Banjrekar Wadi as “our people,” who are hardworking and clean, and he is happy to extend them water services. Even though they live on recently squatted land, he did not question their entitlement to water. He spoke instead of how Banjrekar Wadi's residents made it easy to work in the area, offering his workers water, for instance, when they spent the afternoon working in the settlement.

Where settlers frequently enact a “politics of conscience” to secure the help of city government officials (Appadurai 2002), Kerkar's work revealed both the promise and the limits of such a politics. Although his conscience encouraged him to help the residents of Banjrekar Wadi, it did not do the same work for the settlers of Premnagar. He saw them as being “from outside,” not only because they were Muslim but also because he identified them as “belonging” to other states (like Uttar Pradesh and Bihar). Kerkar articulated a municipal idea of citizenship distinct from that of the nation. In so doing, he excluded some national bodies from belonging to the largest city in the nation.

Thus, while the “urban unsettling of national citizenship is significant” in the contemporary period (Holston 2008:22), it is not a formation of citizenship that is necessarily more inclusive or progressive. Kerkar views certain Indian citizens from “outside” (the boundaries of the state of Maharashtra) as “dirty.” They did not work hard, nor did they keep their settlements clean. Kerkar told me of how Premnagar’s residents made it difficult for his workers to work there; residents shouted and protested whenever the workers arrived. Because Premnagar’s residents did not behave as a good public, he did not feel compelled to work on improving the public system there.

Although Kerkar’s observations are prejudiced, they are not inaccurate. Indeed Premnagar is a dirtier and more contentious settlement. Yet, his account absents the degree to which municipal corporation has not discharged its responsibilities in the settlement. Responsible for the maintenance and upkeep of water, garbage, and sewage connections, the municipal corporation has seldom undertaken any major improvement project in Premnagar. It is easier for Kerkar and other municipal officials to ignore the area because of the exigencies of democratic politics. Premnagar’s residents had for long been part of a larger electoral constituency in which they were the Muslim minority. Elected councilors from the Shiv Sena frequently focused their attentions on projects in the adjacent Marathi settlements, leaving the settlers of Premnagar wanting for municipal services.

The redistricting of council boundaries prior to the last election has made some difference. As a result of demographic shifts, the residents of Premnagar were able to elect their own councillor in the last election. Some municipal services have subsequently arrived in the settlement. The engineers have installed a new valve on a neighboring service line that makes it easier to pressure Premnagar’s lines. They have also done some repairs to the leaky service main. Yet, as of the time of writing this article, these projects have not substantively relieved Premnagar’s water problems. The efforts of the new councillor are mitigated because she belongs to the opposition party in the city government. She is neither not able to claim the larger discretionary budgets of neighboring councilors who are on powerful city committees nor is she able to pressure the engineers to do her work.¹¹

As a result, several service lines within Premnagar remain old and in desperate need of repair. Surrounded by leaky mains and inadequately pressured water, residents in Premnagar today find it easier to engage in a host of infrapolitical practices to access water (Scott 1990).¹² They work with plumbers who promise them water through surreptitious connections to the city’s water pipes, regardless

of laws and practices of the water department. To draw water through these pipes and into their homes, many use their own illegal booster pumps. Booster pumps and illegal water connections trouble the calculations of engineers, who see their use as a social vice that threatens their management and operation of the entire system. They cannot control how pumps take pressure out the city's water network and mechanically (and politically) pressure water for the residents of Premnagar.

Today, such infrapolitical practices are a critical way for Premnagar's residents to pressure municipal water through arrangements of their own. I do not wish to consider these practices as acts of "resistance" (Bayat 1997; Gutmann 1993; Ortner 1995). Instead, I prefer to see them as politically mediated acts of unequal and inclusive settlement, both in the legal and in the material sense. As plumbers, politicians, and engineers sometimes assist unauthorized residents in making leaks in the system, they constitute social relations and make material interventions that enable settlers to live in and be accommodated in the city.

Not all residents in Premnagar use booster pumps. Many are unwilling to pay the high electricity charges associated with their use. Having confronted water difficulties and a leaky system for some time now, residents have also returned to drawing water from wells in the neighborhood. Wells were heavily used before the arrival of city water supplies in the 1970s. In his film about the water problems in Premnagar, resident Shali Shaikh describes how wells, abandoned soon after the extension of municipal water pipes in the settlement, are now being revitalized.

In the beginning the [BMC] supply was good. . . . Then slowly the pressure dropped and people started to get less water, . . . so people became helpless. If they did not get water, what could they do? They must have talked to the MLA [state legislator] and . . . told him that the BMC water supply is low. The MLA saw that there is no BMC water supply and what did he do? . . . He said let's take water out of the ground, and to give people this facility, he made a bore well right next to it [the old well]. [Shaikh 2008]

In his film, Shaikh describes the temporary experience of municipal citizenship in Premnagar. Premnagar's settlers have responded to scarce municipal supplies by returning to draw on the excess of water found in their wells. As sources of water, wells lie outside and beyond the interests of municipal engineers, particularly because they are fickle, decentralized, and small. They are difficult for a hierarchically structured bureaucracy to control. While conducting fieldwork, engineers told me that well water was both insufficient and not of good enough quality to merit their

expertise. Thus, city engineers generally ignore them, allowing settlers and private water entrepreneurs to draw water from them without much regulation.¹³

Unable to pressure the managers of the city's pipes, Premnagar's state and federal legislators (MLAs and MPs) have therefore responded to the settlement's water difficulties by focusing their attentions and finances on the settlement's subterranean water. They have funded the construction of a few new bore wells and pipe networks to deliver this water to residents. The networks they have constructed are managed not by public officials but by party workers, frequently running parallel to and separate from the municipal network. The different pipes that now pervade the settlement materially indicate not just the multiple regimes of water supply that exist in the settlement but also the diffuse multiplicity and plurality of the state (Gupta 1995). They show how water's excess—its availability outside city pipes—can always be drawn on to produce new, diverse, and unstable political regimes in the city.

CONCLUSION

In this article, I have argued for an attention to the quotidian practices of settlers and engineers in Mumbai as they make and respond to difficulties with water pressure. By drawing attention to the ways in which settlers create pressure through differentiated rights and material technologies, I do not seek to be clever with a native category, by drawing attention to its power as a metaphor (Helmreich 2010). Rather, pressure helps apprehend the simultaneity of the social, political, and physical cities of Mumbai as they matter to those who live in them. Socially, physically, and politically constituted, an attention to pressure helps explain how resources, particularly water, are distributed among marginal populations in urban locations. I suggest that by focusing on the ways in which settlers are able to mobilize pressure with the politics and materials of Mumbai's water system, we can better understand the critical, compromised, and graduated ways in which settlers have been able to establish themselves in the city.

As clients of leaders they elect, settlers mobilize diverse kinds of relations to effect their access to water. Made necessary by the city's formal water rules, these informal relationships—located at the blurred boundaries of legality and illegality, and state and society—trouble attempts to theorize politics through normative regimes of civil society (or political society), the state, and the market (Chatterjee 2004; Gupta 1995; Mitchell 1991). To draw water from the public system requires settlers to mobilize their votes as political citizens, their relations of patronage, and their own money. Although legal categories, rules, and policies matter, their ability

to access water also depends on their ability to pressure the public system and its workers. If settlers are successful in these efforts, they come to join a municipal public, one that is entitled to and can depend on the city for a reliable supply of water.

The entitlements of hydraulic citizenship are temporary and precarious. As engineers continue to reorder and rearrange the diverse demands and pressures on the water system, settlers like Rané often find that their pipes slowly go dry over time. Thus, they always need to reiterate their claims and reestablish their relations with the different authorities to return pressure to their pipes. As such, hydraulic citizenship is not just experienced as a unilinear extension of the biopolitical state. Rather, it is an iterative process that needs repetition, renewal work, and revalidation.

Second, by describing the water arrangements in Premnagar, I build on theorizations of the heterogeneous state by drawing attention to the heterogeneity of the public. Seen not only as dirty but also of “not good” character, Muslim settlers have been unable to mobilize as political society to draw water from the municipal system. In responding to their water difficulties by making illegal connections and by revitalizing wells, Premnagar’s residents revalidate the disinclinations of municipal engineers to carry out improvement works in their localities. Yet, as they draw water from renewed wells, they show how water is not controlled by the politically powerful engineers and administrators of the municipal administration alone.

The diverse ways that Premnagar’s settlers can claim water, both from and outside the legitimate structures of the municipal system, point to critical ways in which water exceeds the technopolitical systems that govern it. On the one hand, plumbers easily and quickly are able to make illegal connections on the piped water network. It is difficult for engineers to prevent this water from “leaking” away. On the other hand, settlers are also able to live in the city by claiming water that lies beyond the control of the municipal state. Not interesting to municipal officials, well water produces other political authorities in the settlement. It is drawn on by diverse residents, state legislators, and various religious groups throughout the city. An attention to the practices of gathering water in Premnagar shows how water’s excess and its availability outside the municipal system provide critical means for settlers to live in the city despite the exclusions and laws of public systems.

To conclude, water systems are especially amenable to the application of diverse pressures. Through manipulations of pressure, water can be made available to diverse social groups. This is not to suggest pressure can explain everything

to do with how resources are distributed in cities or how cities are constituted. As Hansen and Verkaaik point out, “No city can be fully known, as it is one of modernity’s most powerful empty signifiers—too multi-layered and overflowing in histories and meanings to be fully captured by a single narrative or name” (Hansen and Verkaaik 2009:8). Multiply mobilized, cities are composed of many social, political, and physical things, whose materialities matter in diverse ways. To the extent that “the history of cities can be read as a history of water” (Gandy 2002:22), however, I suggest that pressure helps explain how hydraulic citizenship is made and maintained by settlers in Mumbai.

ABSTRACT

In Mumbai, most all residents are delivered their daily supply of water for a few hours every day, on a water supply schedule. Subject to a more precarious supply than the city’s upper-class residents, the city’s settlers have to consistently demand that their water come on “time” and with “pressure.” Taking pressure seriously as both a social and natural force, in this article I focus on the ways in which settlers mobilize the pressures of politics, pumps, and pipes to get water. I show how these practices not only allow settlers to live in the city, but also produce what I call hydraulic citizenship—a form of belonging to the city made by effective political and technical connections to the city’s infrastructure. Yet, not all settlers are able to get water from the city water department. The outcomes of settlers’ efforts to access water depend on a complex matrix of sociocultural relations that settlers make with city engineers and their hydraulic infrastructure. I show how these arrangements describe and produce the cultural politics of water in Mumbai. By focusing on the ways in which residents in a predominantly Muslim settlement draw water despite the state’s neglect, I conclude by pointing to the indeterminacy of water, and the ways in which its seepage and leakage make different kinds of politics and publics possible in the city.

NOTES

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1. Rs. 5 crore is roughly \$1 million. Thus, these amounts correspond roughly to \$298 million and \$160 million, respectively—a rather healthy revenue and profit for the water department.
2. I have changed the names of all my informants to protect their identities.

3. Uncomfortable with the pathologies associated with the word *slum*, I prefer to use the terms *settlement* and *settler* in my work.
4. Therefore, as Gandy (2008) and Zérah (2008) point out, colonial cities have been “splintered” from their very inception.
5. The Shiv Sena is a parochial, nationalist Hindu right-wing party that is particularly powerful in Mumbai and has run its civic administration for a number of years (see Hansen 2001).
6. At today’s rates, one dollar is roughly 45 rupees
7. The city water department approves two kinds of residential connections depending on the legal status of the residence: those for planned and approved buildings, and “standpost connections” (for those living in settlements). Because of the low cost of water, those living in the settlements are not eligible to apply individually for a water connection. Instead, they are required to apply in a group of around ten, with one person nominated as secretary in charge of paying the water bill.
8. This provides further evidence of the ways in which citizenship is tied to claims of property in the city (see Joyce 2003).
9. For instance, amid water shortages in 2009, politicians vandalized the offices of the chief hydraulic engineer of the city, and a crowd of over a hundred protestors assaulted an assistant engineer in his local ward office, blackening his face with ink.
10. Unlike Coelho’s experiences in Chennai (see Coelho 2006), all the engineers I met in Mumbai’s water department were men.
11. The Marathi residents of Banjrekur Wadi, however, were well taken care of. Kerkar suggested this was because “there they have a strong local leader, who works with the BMC. That makes the difference.”
12. Although Scott identifies infrapolitics to be among the “weapons of the weak,” these tactics are by no means restricted to dominated groups. As Baviskar and Sundar (2008) have argued, powerful groups also engage in infrapolitical practices outside of the law.
13. Of course, this disinterest is partly dependent on there being sufficient water in city pipes. When confronted with a failed monsoon in 2009, councilors and engineers “found” more than 12 thousand wells in the city that could ameliorate its piped water supply and temporarily began projects to improve them.

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