East Asian Science, Technology and Society: An International Journal (2015) 9:65–85
DOI 10.1215/18752160-2863200

# State Power and Technological Citizenship in India: From the Postcolonial to the Digital Age

**Itty Abraham and Ashish Rajadhyaksha**

Received: 9 January 2014 / Accepted: 31 October 2014


**Abstract** In this article we seek to nuance our understanding of the technologically mediated relationship of state and citizen, first, by framing these relations in terms of Michel Foucault's ideas about state power and governmentality, and, second, by using case studies drawn from the Indian experience to highlight particular risks associated with digital governance and biopolitics. An overview of state and social technological interventions in India shows multiple intersections of sovereign and disciplinary powers. Together, these intersections give new meanings to biopower while also sketching a familiar story of the attenuated character of technological citizenship, notwithstanding numerous examples of popular resistance. To address biopolitics, however, a novel set of challenges emerges: The first is to outline a genealogy of Indian biopolitics, going back to the colonial period. The second is to acknowledge the tension between biopolitics and geopolitics: the state's need to distinguish between citizens and residents for the provision of welfare. The third is the neoliberal turn in governance, with the state increasingly withdrawing from direct involvement in the public sphere and turning to the private sector to take its place. We find that the digitization of identification and benefit provision produces new costs and barriers for the poor to access the entitlements of citizenship, leaving them in some cases worse off than before. Moreover, the visibility produced by entry into digital governmentality is accompanied by a new set of risks, including the expropriation of benefits and the loss of existing assets.

**Acknowledgments** We would like to thank Kavita Philip and Lilly Irani, in particular, for their help in formulating the conceptual terms of this article. We would also like to thank three anonymous reviewers for their comments and suggestions and, in particular, the EASTS editors for their patience and support as this article was revised. We acknowledge the support of the Asia Research Institute at the National University of Singapore for providing the space for the conversations that culminated in this joint article.

I. Abraham (✉)
Southeast Asian Studies Department at the National University of Singapore, 3 Arts Link, Block AS3, 06–12, Singapore 117569
e-mail: seaai@nus.edu.sg

A. Rajadhyaksha (✉)
Centre for the Study of Culture and Society, Bangalore
e-mail: ashish@cscs.res.in

**Keywords** Citizenship · technological society · India · biopolitics · Aadhaar digital governance

## 1 Introduction

The dominant strands of liberal political theory have little to offer the idea of technological citizenship. Whether deriving from modernization theory (Macridis 1968; Rostow 1960) or from more conventional variants of liberal citizenship (Kymlicka and Norman 2000), neither is of much use in coming to terms with the complexities of technological citizenship, a problem compounded in recent years by the proliferation of digital governance technologies. The modernization tendency argues that technological development provides the material foundations for modern citizenship, implying prepolitical political subjects who need to be educated into a state of political awareness through material and social transformation, while the latter approach sees technology as an inherently neutral instrument whose value lies in permitting the liberal state to strike the correct balance between what it perceives as its priorities and the needs of its citizens. Not only do prevailing conceptions of technology and citizenship need much more nuance, but the dominant vision of the state and its publics in these models is too abstracted to illuminate the practices of technological citizenship "on the ground." In this article we seek to offer two correctives to these prevailing views. We seek to nuance our understanding of the technologically mediated relationship of state and citizen, first, by framing these relations in terms of Michel Foucault's ideas about state power and governmentality and, second, by using case studies drawn from the Indian experience to highlight particular risks associated with digital governance and biopolitics.

Two findings are worth noting. First, our overview of technologically mediated relations between state and subject in India shows that familiar configurations of governmentality do not hold, meaning that Foucault's schema requires significant adjustment in order to be useful in Asian postcolonial societies. Second, we explore the limits of technological citizenship by showing how the meeting of digital technologies and neoliberal governance has opened the door to new constraints on the practical meanings of citizenship.

By "technological citizenship" we mean the technological mediation of state–citizen relations. This concept bears a resemblance to the literature on public participation and engagement in the STS literature but importantly differs from it in the following respect (Chen and Wu 2007; Fujigaki 2009). Citizenship is an emergent political outcome: whereas participation begins from an assumption of the legal and moral equivalence of all parties to a technological dispute or project, focusing on citizenship seeks to understand how and to what extent individual subjectivities can emerge under conditions of structural political inequality. Technoscience is assumed, in this perspective, to be an inherent feature of the state: considering citizenship thus permits us to go beyond the discussion of a single project to explore relations between a state that is both founded on and uses technoscience to legitimate itself and a subject population that seeks political voice, recognition, and agency.

## 2 Citizenship and Technology

Inserting technoscience into a discussion of citizenship changes the meanings of citizenship in diverse ways. The first casualty is liberal presumptions that technology is neutral and that subjects respond passively to technological change. Langdon Winner was among the first to show how technological choices, including design, can be used to further particular class interests and block socially progressive policies (Winner 1986). The risk-society literature argues that modern technoscience has transformed social ecologies to normalize everyday dangers, albeit in uneven ways corresponding to the contours of social power (Frankenfeld 1992). Conceptually innovative accounts of "biological" citizenship have shown how accidents caused by the breakdown of massive technological projects (e.g., Chernobyl and the Bhopal Union Carbide disaster) have forced victims to redefine themselves and their ailments in order to avail themselves of the assistance of the state in order to survive and get the treatments they need (Fortun 2001; Petryna 2003). In practical meanings, citizenship becomes a highly attenuated condition overdetermined by state rules and official categories while being accompanied by innovative strategies of deception and subversion. Struggle, operating on many fronts and deploying both human and other agents, has defined another, far more liberated, conception of biological citizenship (Rose 2009). Studies of the AIDS movement in the United States, for instance, have shown how patients and activists worked to redefine their relationship with powerful expert communities of doctors and scientists to take greater control over research trajectories, diagnosis, and treatment (Treichler 1999). As a result, the AIDS movement could be considered a heterogeneous technological assemblage that joins state institutions, communities defined by illness, expert bodies, biomedical discourse, social stigma, along with vaccines and viruses, to redefine the problem of AIDS and give new life to people who had once imagined the disease as an automatic death sentence. Whatever technological citizenship means, these and other studies have made clear that the prescriptions of modernization theory and liberal thought are inadequate to capture the complexities of the technologically mediated relation between state and subject.

Setting this account in the Asian context complicates matters further. Technology has long been a dominant force and metaphor for social transformation in Asia (Adas 1990; Prakash 1999; Mrázek 2002). Influenced by such factors as the perceived success of Japanese modernization after the Meiji Restoration in Japan and the rapid industrialization of Russia following the installation of a communist state, as well as shaped by the opportunities and capital available during the Cold War, newly independent states across Asia took the lead in injecting huge doses of science and technology into what were perceived as backward societies in order to modernize them, overcome their infrastructural weaknesses, and to fully participate in global modernity (Doel and Harper 2006). Justified in terms of preventing the humiliations of colonialism from repeating themselves and promoting a higher standard of living for their subjects, and, often couched in Cold War rhetorics of the superiority of capitalism (or communism) over all other economic models, Asian states have long had an intimate relation with modern science and technology as an economic prophylactic. The successes that a number of Asian states have had in raising absolute standards of living and income through various technology strategies has, not surprisingly, led to

substantial support for such policies among wide swathes of the population, both elite and subaltern. Both consent and coercion are characteristic of technological citizenship in Asia; in other words, the encounter between state, technology, and political subject produces extremely uneven outcomes lying along a continuum from possibility to disempowerment. In what follows, we pay closer attention to the attenuation of citizenship than its advance.

## 3 Sovereign and Disciplinary Modes of State Power

All too often the "state" is reduced to a single mode of power that Foucault calls "sovereign." This oldest and most primitive form of state power is summarized as "the right to take life or let live" or, more bluntly, "essentially the right of the sword" (Foucault 2003: 241, 240). It is not surprising that most analyses of postcolonial Asia give sovereign power such importance. Given the deficit of democracy long prevailing in most Asian countries, there have been few legal and political constraints on state actions until relatively recently. The intersection of sovereign power and technoscientific intervention for development produces a vision that is best described as a postcolonial technological society (Ellul 1964). Coined by Jacques Ellul in his dystopic critique of Western society, "technological society" is an apt descriptor of the vision held by early Indian state managers in their effort to transform their impoverished and largely agricultural society into a modern economy. Technological societies are characterized by a tendency to use languages, images, and metaphors drawn from the mechanical world in order to make comprehensible and powerful arguments for how public policy should be made. Knowledge of the mechanical world—technoscience—replaces other forms of knowledge seeking to manage social issues. James Scott summarizes the core issue at play here as the "radical authority of High Modernism" (Scott 1998, 93). Scott argues that the laudable desire to seek "improvement of the human condition" is undermined by the use of scientific authority to make claims about the necessary and appropriate means to achieve development, and the corresponding "tendency to disallow other competing sources of judgment" (93).

The technological society that flowered with Indian independence, following Scott's analysis, for all its genuine desire to make a better world, was marked by both authoritarianism and a structural tendency to devalue the political field (Nandy 1988). When scientific authority finds itself held up as the highest of human attributes, "rule by experts" comes to be touted as the ideal means to resolve political differences (Mitchell 2002). The image of society as a natural machine implies that politics gets in the way of achieving the common good. In technological societies, politics is conceived of as a superstructure produced through the play of parochial and narrowly conceived "interests" that are contrasted to "expertise," a condition that is presumed to have no bias, owing to its origins in technoscience. This immensely seductive idea comes, it may be argued, from a deeply authoritarian source, but it has nevertheless—or for that very reason, perhaps—attracted wide support across time and space.

Disciplinary expressions of power are "techniques of power . . . essentially centered on the body . . . including all devices that . . . ensure the spatial distribution of individual bodies . . . and the organization, around these individuals, of a whole field of visibility" (Foucault 2003: 242). Social reformers, beginning in the late eighteenth

century, argued for the need to educate and modernize India's allegedly backward subjects, deliberately bringing "the private into the realm of public discourse" (Karlekar 1996: 135). Women and children were particular targets of social reforms that "annexed" the domestic through a discourse of "scientific hygiene that refused to honour preexisting boundaries between domestic and municipal or public space" (Hodges 2006: 14). This tendency would take on a global scale and affect millions by the early twentieth century, as the historian Mrinalini Sinha has shown in her study of Katherine Mayo's notorious tract, *Mother India* (Sinha 2006). In addition to women and children, a host of other marginal social formations, including indigenous people, pastoral communities, and carriers of indigenous knowledge, for reasons ranging from civilizational deficit to subversion to traditional custom, were identified as particularly unsuited to join the modern social order. Civil society, as much as the colonial and postcolonial states, would regularly intervene to discipline these recalcitrant bodies into modern ways through methods ranging from education, immobilization, criminalization, and incarceration to arguing for the need for architectural designs that would overcome the alleged lack of ventilation in urban Indian homes (Whitehead 1996: 197).

Private efforts to reform the Indian subject were accompanied by a host of public actions. The disciplinary power of the colonial state seeking to institute new standards of public health was particularly felt in the areas of hygiene and sanitation. The historian David Arnold reminds us of the varieties of methods instituted by the government to prevent the rise of deadly epidemics in colonial India. Starting with two "exceptional sites of medical observation and control," namely, military cantonments and prisons, state medical authorities disciplined bodies situated across a range of sites, seeking to reduce the incidence of epidemic disease (Arnold 1993: 133). In frontier zones like the Andaman Islands, discipline and sovereign power could be difficult to distinguish. As Satadru Sen puts it, "prison doctors became . . . directors of physical discomfort" (Sen 2000: 131). Corporeal interventions ranged from changes in diet to experimental drug trials: even before Waldemar Haffkine's notorious (but successful) experiments on convict labor in Bombay in 1896, cinchona alkaloid was used to arrest disease among convicts in the Andaman Islands in 1880 (149).

With the rise of the postcolonial state, new forms of disciplinary expressions of power emerged, seeking to discipline and socialize the recalcitrant body as a necessary means toward producing the new Indian citizen. Working from a high modernist paradigm of transformation from above, the state rendered the population as subjects fit at best for benevolent tutelage. With such an imaginary dominating the techno-scientific "commanding heights," disciplinary power was expressed through new instruments of intervention, including the propaganda of the state-run Films Division of India (Roy 2007). Beyond reforming the daily habits of men in the workforce, parents in the home, and children in schools, the state worked assiduously in the biomedical arena to reduce the likelihood of epidemic disease.

The disciplinary powers of the state were rarely exerted in isolation. Working with World Health Organization (WHO) officials, the Indian state achieved a remarkable success in the near-elimination of smallpox through techniques that consciously combined military planning with ruthless public health measures. As Paul Greenough reports, one of the doctors engaged in the prevailing strategy of containment and vaccination described their work as follows:

> Known infected villages were revisited—often repeatedly—to check for new cases and left-outs. Almost invariably a chase or forcible vaccination ensued in such circumstances. . . . We considered the villagers to have an understandable though irrational fear of vaccination. . . . We just couldn't let people get smallpox and die needlessly. We went from door to door and vaccinated. When they ran, we chased. When they locked their doors, we broke down their doors and vaccinated them. (Greenough 1995: 636)

The most deliberate, sustained, and conscious site of social discipline in the postcolonial state was of course the campaign for "population control" (Amrith 2006). The identification of the problem of population growth, "overpopulation," preceded Indian independence, although the preferred means to deal with this problem would vary considerably with time. Although the first five-year plan would identify the "rapid increase in population" as a severe problem to confront, it was not until 1960 that family planning became a major site of intervention by the state (Hodges 2006: 15–16). By 1980, official concerns over the rise of population led the Planning Commission to warn that "all plan projections of reduction in poverty and unemployment will go wrong if success is not achieved in containing the growth of population" (Gandhi and Shah 1992: 114). In an avowed expression of neo-Malthusian thinking, "family planning" campaigns sought to restrict India's population size to manageable proportions, and management was defined through an optimization process that sought both to cap population size in relation to available food supplies as well as to permit an economic surplus to be injected into the development process. What is most striking about India's population policy is how the idea of population shifted from initially being a sign of national strength due to its size during the late colonial period to becoming an explanation of poverty in early postcolonial years. Today, that representation has changed again to seeing population as a resource, notably in terms of its consuming and human capital potential (Rao and Hodges forthcoming).

Unlike China's coercive one-child policy, Indian "population control" was carried out in the shadow of democratic institutions that protected some civil rights under a state strategy that combined economic incentives, administrative power, and a mass education program to achieve this end (Greenhalgh 2008). However, the apparent failure of disciplinary techniques in controlling population growth would lead, during the Emergency of 1975–77, to the direct exercise of sovereign power to control population amid public exhortations that "the nation is on the move." During this period, abuses of human rights were rampant, ranging from the use of public violence to force sterilizations to withholding salaries from government employees who had not met their sterilization targets (Tarlo 2003). Women were increasingly the primary target of state population control efforts. The number of tubectomies, which had been just a quarter of all sterilizations in 1971–72, went up to 79.6 percent ten years later (Gandhi and Shah 1992: 115).

## 4 Popular Resistance to State Technoscience

The dominant discourse of development during the early years of Indian independence was characterized by a call for public sacrifice, most vividly portrayed by Prime

Minister Jawaharlal Nehru's speech during the inauguration of the massive Bhakra-Nangal dam and irrigation project: "Which place can be greater than this, this Bhakra-Nangal, where thousands and lakhs [hundreds of thousands] of men have worked, have shed their blood and sweat and laid down their lives as well?" (Deshpande 2004: 67). A demand for others' sacrifice may well have been the call of the elites, but it was not a slogan that was readily accepted across the country. From the outset of the post-colonial period, there has been resistance to the state's efforts to induce development from above, rising to a crescendo of fear and dissent in the last few decades (Mukharji 2012). Of late there has been an explosion of local and popular protest when large-scale displacement and relocation of communities have been proposed in order to accommodate public or private mega-technology projects, extending from the provincial to the global scale in some cases.

Perhaps the best-known example of such resistance is the Narmada *andolan* (struggle), a decade-long movement that combined aspects of traditional oppositional social movements with mobilization on a global stage, building strategic alliances with environmental movements around the world, and using a range of mass and electronic media to force its voice to be heard and taken seriously (Baviskar 1995). Numerous other examples of resistance can easily be added, from strikes to concerted action to prevent deforestation, namely, the famous Chipko movement that took place in the Himalayan foothills. As far back as the 1980s, the villagers of coastal Baliapal, Orissa, led a determined and successful movement to prevent the Indian government from setting up a national testing range for missiles and rockets. For years, no government official was able even to enter the region as villagers blocked access roads through well-organized warning systems and massive human roadblocks (Routledge 1992). Opposition to nuclear power stations has mushroomed across India today, ranging from a decades-long struggle in Kudankulam, in southern India, to ongoing protests in almost all the newly announced sites where plants are to be built.

Resistance to state technology projects is only one aspect of social pushback. The increasing influence of the private sector, both foreign and domestic, following India's economic reforms of the 1990s, has created a new front in the struggle against displacement due to mega-technology projects. This neoliberal turnaround in state development practices has led to what some have called a new phase of "accumulation by dispossession" following the relaxation of state regulations and widespread granting of licenses to extract natural resources in environmentally fragile areas (Harvey 2003). A multibillion-dollar project proposed by the Korean steel company Posco in the resource-rich state of Odisha has stalled because of legal and political resistance, while the domestic Tata conglomerate was forced to change their plans of setting up a car factory in Nandigram, West Bengal, as a result of local protests in spite of initial state support (Mishra and Nayak 2011; Bhattacharya 2007). Resistance to the new public-private alliance in India is not restricted to economically marginal "quasi-publics" (Varughese 2012). On a different front, civil-society activists have found ways to push back against what they see as an economic model that disregards long-term national priorities for the short-term benefit of private-sector firms. Concerns over the impact of the introduction of genetically modified crops in India, notably those promoted by the multinational seed company Monsanto, have led a coalition of nongovernmental organization (NGO) activists, headed by the Gene Campaign, to fight for changes in Indian intellectual property laws and have led to

new modes of public participation in determining public policy in debates over top-down technoscience (Bhargava 2003).

If sacrifice and tutelage once undergirded the expression of sovereign and disciplinary power in the state's effort to constitute a technological society, consent and compliance among the economically marginal can no longer be counted on. While we have made mention of a few examples of direct confrontations to prevent the imposition of state technoscience, it must also be recognized that the extent of success has been mixed on the national scale. Moreover, what is meant by resistance varies. Strategies of confrontation differ, as do the contexts and rationale for mobilization. Local failures on the part of the state have led to what might be called a war of maneuver, in which other locations are chosen for identical projects while lessons are learned about how best to induce local populations into accepting projects without protest or delay. Apart from the sovereign power at its disposal, the state and its allies benefit enormously from working on a national scale, in contrast to movements that are typically limited to a regional or local scale in articulating and carrying out their opposition. A more direct way of making this point is to acknowledge that there are relatively few cases of successful opposition to technological society.

Notwithstanding failure in a narrow sense, the cumulative impact of struggle against technoscience projects, private and public, has not been trivial. The scrutiny that the Narmada *andolan* brought to the logic and efficacy of large dams as privileged motors of development has delegitimized the idea of highly capital-intensive development induced from above. No longer will it be taken on faith that such projects are in fact the unquestioned solutions to a variety of problems that they long claimed to be. The movement did not stop large dam building altogether, but it has undermined the hegemony of the techno-scientific fix. In a manner similar to the AIDS movement in the 1980s and 1990s, no small measure of Narmada's success lay in its transnational deployment of credible, technically informed counternarratives to contest official experts' claims about environmental costs and the prospect of economic efficiency and returns. Large dams will continue to be built, as the benefits they offer to the powerful few are too many to give up, but their ideological props have been removed. Now the state has little choice but to deploy its sovereign power in order to get its way. The long-term impact of movements like Narmada has been permanently to expose the complex of public and private interests that ally with technoscience in order to impose their vision of technological modernity.

In addition, the effects of struggles that appear to have failed in a narrow sense have sometimes taken partial root in new legislation and the creative use of right-to-information laws to inform strategies of resistance. A case in point is the liability law that has been passed with regard to new nuclear power stations.[1] For the most part, the new Indian legislation follows international standards by keeping the net liabilities of reactor operators very low and making it extremely difficult for potential victims of accidents to receive reasonable compensation or to directly sue the operator of the reactor. The new law also commits the government to provide compensation beyond the obligations of the nuclear operator, effectively socializing the cost of any accident,

[1] The Civil Liability for Nuclear Damage Act, 2010. For an analysis of the act, including the full text see http://www.prsindia.org/billtrack/the-civil-liability-for-nuclear-damage-bill-2010-1042/ (accessed 27 October 2014).

indemnifying private operators. However, clause 17 of the act leaves open the possibility of the government suing the original suppliers of nuclear equipment, a provision that has come under considerable international criticism. There is little question that this provision reflects the immediate impact of the Kudankulam antinuclear struggle in southern India that has raised questions about the legitimacy of these international standards and evokes as well the memory of earlier poorly managed industrial accidents, particularly Bhopal. Sovereign power may be all-powerful but is not without its own internal contradictions.

The overall effect of all these struggles has meant that sacrifice and tutelage have faded away as dominant discursive tropes of state language: the people are no longer willing to be the passive subjects of the developmental state. Through struggle and direct confrontation, technological society has been stripped of its neutral aura. Technological citizenship, faced with the might of conjoined sovereign and disciplinary state powers, may be attenuated, but technoscience can no longer be uncritically hailed as a universal solution to national development.

## 5 The Biopolitical Mode

While distinguishing between different modes of state power has obvious analytic benefits, this overview also highlights the complexities of uncritically applying the Foucauldian schema of state power to Asian and postcolonial societies. Susan Greenhalgh, in her discussion of the "biogovernance of population" in China, confirms this view, noting that "very different conclusions" need to be drawn when we move away from Western accounts of biopolitics, since "for most people in the world today, the politics of population-as-a-whole is the life politics that matters most" (Greenhalgh 2009: 207). Differentiating between the Asian and Western contexts involves the necessity of seeing (1) how and which modes of state power typically work in conjunction with each other; for example, while sovereign, disciplinary, and biopolitical modes of power are mobilized together in the Aadhaar scheme (see below), sovereign and disciplinary modes are joined in public health emergencies; and (2) acknowledging the importance of social power, namely, the long histories of private efforts ("social reformers") in disciplining the native body, especially the female and gendered body. The historical specificities of the Asian experience reshapes what we mean by biopower, offering novel combinations of state power as well as requiring, in addition, consideration of the power of civil society and private agents. Moreover, in understanding the changing nature of biopolitics in the current neoliberal conjuncture, not only is the unit of population a major site of state intervention, as Greenhalgh argues for China, but market relations intersect with digital technologies to play an important role in producing new biopolitical subjects in India.

A viable biopolitical regime requires an unimpeachable means of identification as its first step (Foucault 2007; Torpey 1999). Establishing the "unique" identity of native subjects had vexed East India Company administrators from the earliest Indian census, dating back to 1780 (Cohn 1996). A century later, this anxiety took the material form of forensic techniques such as anthropometry, leading eventually to fingerprinting and ushering in a new confidence in the ability of the state to determine the true identity of its residents (Cole 2001). In recent decades, a host of novel biometric techniques,

including iris scans and DNA tests, have joined hands with the electronic and digital revolutions to create new conditions under which Indians could be identified and, by extension, territorialized. The latest iteration of the identification problem takes shape in the controversial Aadhaar project, a classic biopolitical initiative, albeit "with Indian characteristics."[2]

India is unusual in that, unlike most countries, it does not have an official national identity card nor does it require citizens to carry state-issued identification cards. As a result, a number of devices have informally come to fill this gap, including the voter identification card first issued by the Election Commission of India in the 1990s, the PAN (permanent account number) card issued by the federal Income Tax Department, the ration card that is issued by state (provincial) ministries of food and civil supplies, and, to a far lesser extent, the state-issued driver's license and the federally issued passport. Apart from these, there are several other substitutes that might be used to claim or establish identity, such as the "job cards" of social welfare programs like the Mahatma Gandhi National Employment Guarantee Act as well as other cards showing proof of insurance or access to housing benefits and pensions.

In 2009, to add to this inconsistency of official identification, the previous Indian government created an immensely ambitious and expensive scheme to provide each of the 1.3 billion residents of the country a biometric "unique identification number," the so-called Aadhaar number. Originally intended to consolidate the quasi-official means of identification into a single "unique" identity through the latest advances in digital database technologies, the Aadhaar project was ultimately justified in terms of its potential for social welfare. Proponents claimed this project would make it easier for the state to bridge the "last mile," namely, by securing the most vulnerable members of society with their bank accounts and thereby bypassing powerful intermediaries long accused of skimming off welfare payments. In short, Aadhaar justified its considerable expense by seeking to serve the poor in the most efficient and modern way possible.

Central to the conceptualization of Aadhaar is the biometrically identified individual inserted into a digital universe in order to enable the secure provision of welfare benefits. In a founding document, a 2009 working paper titled "Creating a Unique Identity Number for Every Resident in India," billionaire and former CEO of the Indian IT (information technology) multinational Infosys, Nandan Nilekani, spelled out the singular characteristics of the program. First of all, Aadhaar is not a card or identity substitute; it is a number. This "unique" number fixes a single individual in a

[2] It is worth mentioning that Aadhaar (lit. "support," India's unique identity project), which relies on the latest in digital database technologies and biometrics, reflects a now well-established technological practice of "leapfrogging" what were once assumed to be fixed stages of development through the application of the latest technologies on a mass scale (Singh 1999). The starting points for a leapfrogging strategy in India were the atomic energy project (1948), the space program (1961), and the Electronics Commission (1963). The pioneering space scientist Vikram Sarabhai explicitly spelled out the underlying logic of this approach when he argued in a policy document published in 1970 that India should build its own satellites for development and communication (Atomic Energy Commission 1970). The early manufacture of cheap, portable transistors in state-owned factories was followed by terrestrial transponders in the form of the SITE project, which inaugurated the televisual revolution. These projects would in turn be reinforced by the steady upgrading of satellite capacities through the INSAT series of satellites. The exemplary moment of leapfrogging was in the telecom sector. Public call booths and low-cost wired networks using technologies adapted by Sam Pitroda and his C-DOT team were soon followed by cell phones and various wireless technologies deployed on a mass scale, well before such access was commonplace in more developed countries (Pitroda and Pitke 2011).

national database. Each individual is identified by biometrics—ten fingerprints and two iris scans—in a flawless (or near-flawless; this is a matter of controversy) technique so as to eliminate duplicate and fake identities. The unique Aadhaar number is intended to be a digital link between the public and private databases that have proliferated, each created for different reasons and serving different ends. In other words, Aadhaar was intended to function primarily as an authentication service, verifying whether a digital person corresponded "uniquely" to an individual human being. The system was not intended to supplant or interfere with the structure or functioning of public and private databases. These agencies would continue to determine their own policies and to maintain independent confidentiality commitments to their customers and beneficiaries.

Aadhaar CEO Nilekani would represent the project in futuristic terms while at the same time suggesting that opposition was anachronistic. "If you don't want Aadhaar, be my guest. I can only tell you Aadhaar will tomorrow be a convenience thing and you can transact everything online, even from your mobile phone after just one authentication. You're entering a paperless, digital world. Aadhaar is for people who don't have any form of identity, no access to resources, essential goods and services, to a job or to food" (*Deccan Herald* 2013).

While Aadhaar's database would need to overcome considerable technological challenges before it could be used, it was claimed that the mechanisms by which people would be enrolled were relatively simple and cost-effective in relation to the project's objectives. Limiting its own purpose to the twin acts of de-duplication and authentication, justified by repeated invocation of the social benefits of helping the poor and marginal, Aadhaar was effectively projected to be a neutral link between a multiplicity of meta-users. Its purpose would be created by the services that used it; in other words, user needs would define the ends of the Aadhaar number. The benefits would include streamlining economic activities by "increasing transparency in procedures, reduc[ing] transaction cost and time, and introduc[ing] international standards and practices in the area of clearance of export/import of cargo."[3] Potential services would encompass e-banking, excise and customs, income tax, insurance, passports, pension schemes, commercial taxes, land records, and municipal records.

In his best-selling book, *Imagining India: Ideas for the New Century* (2008), Nilekani identified the original model underlying Aadhaar as the digital analogue of the micromarketing strategies employed by Indian consumer-goods multinationals, while simultaneously arguing for information technologies as the historic spark that would unfold a new social revolution.

> Even as Hindustan Unilever Limited, P&G [Proctor & Gamble], Nirma, and Cadbury began selling everything from shampoos to soap, detergent and chocolate in tiny 'single serve' packets costing a rupee or less, banking firms such as ICICI began to offer 'micro' loans and hospitals such as Aravind Eye offered targeted, low-cost health services, technology entrepreneurs began offering low- cost internet and computer usage to villagers across rural India. [A]s the possibilities in such low-cost technology began to explode, firms across retail, banking, and communications found that IT could well be their missing link in

[3] See http://uidai.gov.in/ (accessed 29 October 2014).

> connecting with people who were often illiterate and located in distant villages, dirt-road miles away from the nearest market. And reform-minded bureaucrats found that such technology, untouched as it were by the legacies of the sarkar raj [dirigiste state], could be a powerful leverage for better public services. IT could play a bigger and more powerful role in the economy than anyone had guessed or attempted before. (Nilekani 2008: 32)

However, as the next section shows, this juxtaposition of the private sector and the new digital technologies would shape biopolitics in ways that Nilekani did not predict but that were presciently highlighted by Kavita Philip (2008).

## 6 Neoliberal Biopolitics

Case Study: Ashok has come to get the Aadhaar enrollment for his son at the Humana People-to-People Resource Centre. He waits impatiently for the process to be complete, since his son has to be in school by noon. He has lived with his four children and parents in a temporary shelter for twenty years. He does not have a bank account. He is officially homeless.[4]

In 2010, the government of Delhi inaugurated its flagship Mission Convergence project (or the Samajik Suvidha Sangam). Supported by the United Nations Development Program, this project sought to reproduce Brazil's Bolsa Familia (Family Stipend) program by providing welfare services through public private partnerships (PPPs) coordinating government agencies, the private sector, and NGOs. As its first step, it planned to conduct a detailed identification of the entire informal sector of the city, including two key categories: slum dwellers and the city's "homeless." One of the core problems of providing benefits to the homeless is structural: they have no officially recognized address. This problem was innovatively overcome through involving homeless resource centers such as Humana, who lend their own office address to people such as Ashok. Such a privilege is, however, extended only to people who live close to the resource centers. While this response permits communication between the state and the homeless person, it does not serve the state's goal of identifying the geographic locations of the homeless. This too is innovatively solved: Mission Convergence issues temporary cards that carry their name, gender, approximate age, photograph, and a numerical code that refers to a geographical pocket on an Eicher map of Delhi. This code takes the form of, for example, 10HP56B, which would translate to 2010 (the year of registration), Homeless Pocket, column B on page 56 of an Eicher map. While this exercise proved effective in identifying the "officially homeless," it effectively created a two-tier categorization of homelessness. The first set were those who were able to avail themselves of state benefits through the act of asserting their homelessness; others were unable to do so. At the same time, the survey

[4] Case studies are drawn from a multisited national project directed by Ashish Rajadhyaksha at the Centre for the Study of Culture and Society (CSCS), Bangalore, entitled *The Identity Project: An Inquiry into the Unique Identity Initiative* (Rajadhyaksha 2013). The results of this project were published as an e-book, *In the Wake of Aadhaar: The Digital Ecosystem of Governance in India* (CSCS: Bangalore, 2013). Interviews were conducted by Ashish Rajadhyaksha, Nafis Hasan, S. Ananth, Bhuvaneshwari Raman, and Zainab Bawa. Funds for the Identity Project were provided by the Ford Foundation, Delhi.

defined the "official homeless"—the working poor who live in temporary shelters—through a stigma that established their claim to state benefits.

The identification of the "official homeless" as beneficiaries of state welfare created an immediate incentive for private agencies to take advantage of this newly defined condition. Along with their Aadhaar numbers, the enrolled homeless were given access to bank accounts intended to receive cash remittances from the government. Entrepreneurs with names such as the Society for Promotion of Youth and Masses and mHS City Lab promptly opened so-called 'Working Men's Hostels' for the homeless, enabling them to claim an address that would entitle them to be registered and to receive Aadhaar numbers and bank accounts. However, these agencies also charged them a fee for this privilege that was typically higher than the prevailing rate for existing homeless shelters. Biopolitical recognition for Ashok and other "official homeless" through the new digital technologies had created a new "industry" of private homeless shelters while also exposing them to new forms of exploitation because of their new-found visibility to agencies in the private sector.

Case Study: Bade Bi is a woman in her sixties, a resident of Gonegandla Village in the Karnool District of Andhra Pradesh. Her husband sells firewood, and her son sells fried foodstuffs from a pushcart. She is serially in debt, having taken loans from some of the largest microfinance institutions in the state, as well as from the local branch of the public-sector State Bank of India. Often using one loan to pay another, and thus keeping herself afloat as a borrower in good standing, Bade Bi experiences increasing ill-health, making it harder for her to balance her finances. Notwithstanding her precarious financial condition, Bade Bi is also what is known as a "central leader" for the microfinance industry, helping ensure that other borrowers pay on time.

The back story to Bade Bi's cycle of indebtedness can be found in the work of the Peruvian economist Hernando de Soto and popular books such as C. K. Prahalad and Stuart Hall's *The Fortune at the Bottom of the Pyramid* (2004). These writers have argued that rather than seeing the poor as those who lack capital, it is more accurate to understand their condition as suffering from legal invisibility and lack of access to formal institutions. The poor want to be entrepreneurs, they argue, but lack the means to begin businesses because of structural impediments, leading to an inability to access credit at reasonable rates of interest. Because of their lack of legibility in the financial system, the poor are forced to pay higher costs to access capital and lack the means to hedge their risk, exposing their businesses to a higher likelihood of failure. However, these writers argue, if financial agencies were willing to find ways of making loans to the pyramid's bottom dwellers, the resulting "fortune"—the net sum of the liquidity they possess—was likely to be in the trillions of dollars worldwide. This fortune would not necessarily accrue to the poor, however, but it represents the potential for innovative and risk-taking businesses that find ways of reaching them. As is well known, the most popular and widespread means of reaching the entrepreneurial poor has taken the form of microcredit, the creation of the Bangladeshi economist and founder of Grameen Bank, Mohamed Yunus. The most innovative aspect of the practice of microcredit, as numerous studies have shown, is to transfer the costs of enforcement and repayment of loans to borrowers, organized in small groups; moreover, the extremely high interest rates charged on small loans can offer returns to lenders as high as 60 percent.

Bade Bi's home state of Andhra Pradesh accounts for 35 percent of the overall microfinance lending in India. Between 2009 and 2010, the number of microfinance loans in the state increased by 26 percent and the overall volume of loans by 46 percent. As S. Ananth's work for the CSCS Identity Project shows, although microcredit loans are meant to be restricted to income-generating projects, in practice, loans are offered for all kinds of reasons, including immediate consumption, housing, and education (Ananth 2011: 361). Such loans require collateral, usually pledging of land or homes, and often also require the submission of blank checks. His research reveals that although loan documents often claimed to be for "agriculture" or to buy "buffaloes," these claims were not only often intentionally wrong, but borrowers were often unaware of the officially stated purpose of their loans. Although the documentation required for loans, which gauges the financial health of the borrower, is meant to be an exhaustive exercise, borrowers typically claimed that they filled in a short form usually written in English, which they could not understand. Initial loans were always small, usually about five thousand rupees, but once a borrower paid half the loan, she was typically made eligible for a higher loan. Ananth has extensively documented instances in which companies have granted two or more loans simultaneously—in local parlance, "*pedda* (large) loan" and "*chinna* (small) loan." The outcome was to leave borrowers, as the case of Bade Bi shows, deeply indebted.

In 2010 the microfinance industry was hit by a major crisis when around fifty microcredit clients committed suicide under the duress of crippling debt burdens and coercive repayment tactics. These suicides over relatively small amounts of money stood in marked contrast to the considerable fortunes made by the owners and executives of microfinance corporations. Notwithstanding these tragic outcomes, this was not a moral crisis. Bank exposure to microfinance companies was estimated conservatively to be nearly Rs. 10,000 *crores* ($1.6 billion), and by some accounts to be three times that amount. It has been pointed out that if there were to be a 25 percent cut in the collection of all Andhra Pradesh loans, the earnings of larger banks would decline by 2–4 percent while for the smaller banks it could be 5–8 percent, and a complete default would be an unmitigated disaster for the banking sector.

Rather than indicting the rapacious and illicit techniques of the microfinance companies who had encouraged and benefited from excessive debt, the bulk of public blame came to settle on borrowers who were accused of being irresponsible and unready to be a part of a modern credit economy. The response was to call for better lending practices, especially determining the true extent of the debt held by the poor. Raghuram G. Rajan, now the head of the Reserve Bank of India, proposed that the problem could be solved through the kind of technology typified by Aadhaar. In *A Hundred Small Steps: Report of the Committee on Financial Sector Reforms* (2009: 70), published by the Planning Commission, Rajan argued for a means to capture "credit ratings for retail customers" through a "unique citizen ID." Such "capturing [of] all the transactions electronically and mandatory sharing of data with a credit bureau" needed to become mandatory to prevent a repeat of the crisis. The goal was "to achieve near universal information sharing (at least on negative information) by bringing banks, cooperatives, microfinance institutions, and nonbanking finance companies into the sharing network" (ibid.). Aadhaar would permit Bade Bi to acquire "digital" citizenship in the new financial ecosystem by recording all her loans in a single credit rating system. While her own economic condition would not

necessarily improve, the private agencies that wanted to lend to her would now be protected by knowing what risk she "truly" represented to their bottom lines.

Case Study: In 2006, the state government of Karnataka in southern India introduced the Nemmadi Kendra (NK) program to enhance the "transparency, accountability, and responsiveness of the government-to-citizen needs," building on the successes of an earlier e-governance program called Bhoomi (Raman and Bawa 2013, 162). Operated as a public-private partnership between the state government of Karnataka and a private consortium, NK kiosks were set up across Karnataka's villages and rural districts combining an individual identification function to enable a more efficient delivery of welfare benefits with the digitization of state land records. As Bhuvaneshwari Raman and Zainab Bawa show, the Nemmadi project was primarily designed to overcome the considerable confusions entailed by competing land claims in rural Karnataka. The provision of "clear titles," as it is phrased, would seek to overcome imperfect information regarding land claims amidst a diversity of land types and tenure forms that were the legacies of multiple and overlapping cadastral regimes. Government officials believed that the digitization of land records would iron out these uncertainties and inaugurate a modern regime of property rights to enable the efficient working of the market. The immediate backdrop to this effort was skyrocketing land prices, which followed Bangalore's rise to international prominence as India's "IT capital." In this context, advocates of digitization argued that this project was critical to ensure that land sales were being properly registered and that the state was receiving its due share of incomes from stamp duties and registration fees.

Until digitization, Raman and Bawa show, rural citizens interacted directly with the frontline workers of the state's revenue department—village accountants and revenue inspectors—in addition to local leaders, village council members, and local middlemen, in order to obtain official identification, welfare benefits, and records of their land transactions. Village accountants were responsible for maintaining manual records of changes in land use and cropping histories. Changes were recorded by writing and rewriting over the same record not only legal transactions but also the "extralegal" claims negotiated among family members, between identity groups, and other members of the rural community. In effect, manual maintenance of land records and mutation registers (recording the history of ownership transfer) endowed frontline officials with the information and systemic power to act as arbitrators to resolve conflicts involving multiple claims, as well as disputes over different land parcels in the village. These "street bureaucrats" arbitrated in situations of conflicts over claims on land, either on their own or with the support of elected representatives, local leaders, and village elders, and they had wide discretionary powers not only in issuing land records but also in deciding how to prepare records under different circumstances and for diverse purposes. These were the officials who assisted farmers in representing their claims before the concerned state authorities when floods or other disasters occurred and when farmers needed verification regarding the extent and nature of their losses in order to claim government benefits.

The concentration of information and control over land records in the hands of village accountants had long been a concern in the state revenue department, say Raman and Bawa. For higher-level bureaucrats, the power of the village accountant, compounded by the manual maintenance of records, directly lent itself to inefficiency, corruption, and lack of accountability and transparency. In addition, as records were

maintained in different registers, it was difficult to consolidate data from disparate sources to clarify who owners were, how much land they controlled, and what its prior uses and purposes had been. This undermined the potential for attracting investments or of taking advantage of opportunities to raise revenues through land sales to private or other state agencies. Digitization, for the senior bureaucracy, was thus as much a means to curb the power of village accountants, Raman and Bawa argue, as it was an effort to enable a transparent land-records regime. With the introduction of the Nemmadi project, the powers of arbitrating disputed titles and recording changes to the land tenure and cropping system were shifted to the state revenue department headquartered in the city.

Users felt that while the Nemmadi project had made some transactions easier, it had become more expensive now to correct mistakes and record changes in land use. The power to authorize corrections was now restricted to senior administrators of the rank of assistant commissioner and above, based in Bangalore. This administrative change required the mediation of urban brokers, leading to higher costs for making changes in the digital database. Most users explained that after the implementation of Bhoomi, it took a minimum of six months and more than ten thousand rupees to correct records. If the error was serious, the applicant had to submit sixteen types of records along with their application. Each of these records was held in different offices at the district and the city level, and negotiations with several administrations were required before they could be procured. The costs of correction of records also went up according to the type of errors and the location of the plot in question. Sometimes, even after more than a year of applying for correcting errors, some applicants were unable to resolve the issue. It was also revealed that economically marginal groups found the process of applying for pension schemes and government benefits via Nemmadi so expensive that it discouraged them from applying for welfare schemes altogether.

On the other hand, economically affluent users and village council members who were involved in the real-estate economy found the Nemmadi system extremely convenient. In addition, newly available and easily accessible land records data was, not surprisingly, a windfall to real-estate dealers (Raman and Benjamin 2011). As one village councilman noted, "The advantage is that you can see the records on the Internet if you know the survey numbers. You can also see details such as the name of the owner of the land parcel, whether the plot is north-facing, south-facing, east-facing, etc. It is a very open system. So from anywhere in India, if you know the survey numbers, you can see this information. There is no objection as to who can see this information" (interview, 15 July 2010). In addition, "Nemmadi is good. We can sit here and see the details of the land anywhere in Bangalore" (interview with broker, 7 July 2010). By contrast, the president of a Dalit community group said,

"[Nemmadi] has become a developer's paradise . . . even if a owner does not want to sell, [developers] can mobilize force to pressurize [owners] to part with their land. . . . So if you have information on one hand and ability to mobilize muscle power and money, the land is yours" (interview, 29 June 2010). Despite the claims being made about the virtues of digitization, including uniform access to information, transparency, and revenue enhancement, there are obvious differences in terms of people's ability to capture this information based on existing endowments of power and resources. In addition, Nemmadi shows how the visibility produced by the digital

database poses real risks to the legitimate claims and assets of socially and politically weaker communities.

## 7 Conclusion

In this article we have sought to further our understanding of and to show the limits of technological citizenship. If the historical account of the joining of sovereign and disciplinary modes of power outlines a familiar, if more nuanced, picture of technological citizenship as an attenuated condition, the situation becomes more complex when we turn to biopolitics. While the biopolitical mode of power is defined as a pastoral mission of the state, targeted at the improvement of marginal populations, it is complicated through its imbrication with the prior problem of "unique" identification. In addition, biopolitics faces two further challenges: the first is the tension between biopolitics and geopolitics (the need to distinguish between citizens and residents for the provision of welfare), and the second is the neoliberal turn in governance, with the state increasingly withdrawing from direct involvement in the public sphere and turning to the private sector to take its place.

Within two months of the inauguration of a new Indian government in Delhi in May 2014, a long-standing policy debate was resurrected. The new home minister, Rajnath Singh, announced that the government was going ahead with the National Population Register, a controversial legacy of the previous government. This proposed database would seek to identify all "genuine Indian citizens" and incorporate them with secure and tamper-proof "national identity cards" (*Indian Express* 2014). At one level, the primary difference between these two database proposals, namely, the National Population Register (NPR) and Aadhaar, has to do with the legitimacy of belonging, that is, the difference between citizens and residents (Benhabib 2004). The NPR is explicitly intended to identify "genuine" Indian citizens (thereby making visible the illegitimate residents of the country through what Rose [1999: 28] calls a "regime of intelligibility"), whereas the Aadhaar database seeks to identify resource-poor and needy residents of the country in order to serve their needs more directly and effectively. The gap between these two projects highlights a long-standing divide that lies at the heart of the idea of governmentality, namely, the tension between identifying persons as a means of securing against threats to national security versus identifying persons in need of social benefits and protections or social security (Dillon and Lobo-Guerrero 2008).

Foucault proposed that the shift to "government" (rather than "rule") is a reformulation of the state from a legal and sovereign power to a "government . . . [concerned with the] welfare of the population, the improvement of its condition, the increase of its wealth, longevity, health, etc." (Burchell, Gordon, and Miller 1991: 100). What led to this change in state practice, Foucault argues, is the historical emergence of the idea of the population as an independent social formation with "its own regularities, its own rate of deaths and diseases, its cycles of scarcity, etc." (99), alongside changes in the meanings of national wealth. Noting that such a shift did not mean the replacement of sovereign power with another mode of rule, Foucault argued that it was necessary to see the process as a "triangle, sovereignty-discipline-government, which has as its primary target the population and as its essential mechanism the apparatuses of security" (102).

The difference between the NPR and Aadhaar projects highlights two very different objectives for the state's "apparatuses of security." The first is geopolitics: identifying and then separating citizens and residents in the interests of national security; the latter is biopolitics: identifying all residents as a first step toward providing them with social security. It is this tension between ends that makes a policy debate ostensibly about identity cards so contentious and difficult to resolve—and that also makes it, in the same instant, so much more than that. Seen in this light, the Indian debate is playing out a contradiction immanent to the idea of governmentality. The divide between geopolitics and biopolitics reflects divergent state missions, each with their own distinct genealogical origin (Foucault 2003). Each mission in turn points to distinct conceptions of state responsibility and national identity. Geopolitics seeks to strengthen the territorial state through massive injections of technology directed at the infrastructures of sovereign power: energy, steel, cement, food grains, transport, defense, and communications. Biopolitics involves, on the other hand, a pastoral mission: state actions that secure the population and build resilience through better health care, labor protections, targeted welfare projects, public housing, and subsidized food. Both missions have long relied on technologized means to reach these ends, but each reflects very different conceptions and practices of citizenship. This article marks a modest step toward outlining a genealogy of Indian biopolitics and its corresponding practices of citizenship.

Through a series of symptomatic case studies, this article explores the impact of digitization of governance on the quality of citizenship. We find the outcomes deeply troubling. In different ways, the alliance between the digitization of governance and the privatization of welfare can be seen to lead to worse outcomes for marginal populations. The digitization of identification and benefit provision produces new costs and barriers for the poor to access the entitlements of citizenship, leaving them in some cases worse off than before. Moreover, the visibility produced by entry into these digital governmental projects brings a new set of risks with them, including the expropriation of benefits and the loss of existing assets. Far from "bridging the last mile" through greater transparency and efficiency and lowering the barriers to accessing entitlements, neoliberal digital governance reinforces the existing marginality of some communities by making them more vulnerable through increased legibility while simultaneously strengthening the already uneven social distribution of resources. Neoliberal biopolitics, working through new modes of digital governance, has furthered existing differences of private power and privilege in the name of making more public resources available to the marginal and needy.

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**Itty Abraham**'s research interests include nuclear power, the politics of the new digital technologies, and histories of biopolitics. His most recent book is *How India Became Territorial: Foreign Policy, Diaspora, Geopolitics* (2014).

**Ashish Rajadhyaksha** was principal investigator of the Identity Project conducted by the Centre for the Study of Culture and Society, Bangalore, on the Government of India's Aadhaar project between 2009 and 2012. Among his other writings, he is the author of the book *Indian Cinema in the Time of Celluloid: From Bollywood to the Emergency* (2009).