Seams that Matter in Approaches to Study Processes of Marginalization

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Abstract

This paper outlines the trajectory of my ethnographic research on the design and use of India's national biometrics-based identification project, Aadhaar. My research unpacks the heterogeneous seams between Aadhaar and the Indian bureaucracy that challenge the processes of claiming social welfare in India. It situates marginality as an outcome of troubles in navigating these seams and documents the lived experiences and invisible work of data subjects (Aadhaar users) in representing themselves through their data records. I conclude by arguing that a focus on seams is not just a useful heuristic in approaching questions of inclusion and equity in the design and use of ICTD, but it is also a useful tactic in understanding and bridging the differences in the research of the *Solidarity Across Borders* workshop participants.

Author Keywords

inclusion; infrastructure; seams; marginality; imbrication; data publics; bureaucracy; Aadhaar.

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

Introduction

> "Now when you go to these [government] offices, people have found a new excuse for why they can't do your work. Computers are the new 'babus'! ['Babu' is a commonplace Hindi word for a bureaucrat.] They will tell you things like, 'Madam, we want to register your marriage but this computer won't let us!'" (Yogita narrating her troubles in obtaining a marriage registration certificate without an Aadhaar number, personal communication, 3 August 2015)

Yogita was one of my first respondents as I began my fieldwork on Aadhaar, India's national biometrics-based national identification project, in 2015. This moment—when she said, "Computers are the new '*babus*'"—still remains foundational to my position on marginality engendered in the design and use of Aadhaar. Yogita's point is a simple one: *computer interfaces designed to follow the rules of a bureaucracy act like bureaucrats themselves*. However, it has profound implications. Computers can act as efficient Weberian bureaucrats [23]. However, computers do not act alone, rather it is

a (re)configuration [19] of humans and machines that *join together* to create conditions for marginality in Aadhaar-enabled Indian bureaucracy. For example, it is not difficult to accommodate lack of Aadhaar numbers in marriage registration. Anand and Udupa, both Delhi residents, facing similar challenges as Yogita, note that the solution was to "key in dots instead of digits in the box provided" [1]. I study the pertinent question of accountability as Aadhaar mediates democratization of access to government services in India's transition into biometrics-based governance.

This question is central to the ongoing debates on Aadhaar, which revolve around whether a state can empower its citizens by uniquely identifying them. Based on three biometric modalities (ten fingerprints, two iris scans, and a facial photograph) and basic demographic information (name, age, gender, and residential address), Aadhaar assigns a unique 12-digit number to every enrolled resident [20]. The Unique Identification Authority of India (UIDAI) began Aadhaar enrollment in 2010. It has successfully enrolled more than one billion Indian residents [12], making Aadhaar the largest biometric database in the world. The government is promoting Aadhaar's use by emphasizing the benefits of being made accountable to welfare programs [21]. However, critics express skepticism not only by invoking the potential of Aadhaar-enabled surveillance, but also by articulating various forms of marginalization enacted in biometric-based identification practices [4,13,15]. My research advances public understanding of biometrics-based bureaucratic practices by examining this promise of empowerment through unique identification and the debates over processes of achieving it.

On a broader note, relating to the theme of the workshop on *Solidarity Across Borders*, my research is geared towards conceptualizing emergent forms of marginality in using information infrastructures and documenting the lived experiences of vulnerable data subjects in Aadhaar-based transitions within processes of claiming social welfare in India. Since digital technologies constantly evolve in response to their use, their imbrication in extant distributed work practices remains in a continuous transition. I engage with this transition to elucidate how everyday experiences of data subjects can help us better understand the features and limits of 'infrastructuring' [11] digital technologies to achieve their prescribed and imagined goals. This focus helps illustrate the invisible work [18] often demanded of data subjects in leveraging the affordances or overcoming the barriers enacted by information infrastructures to represent themselves and claim services of organizations collecting their data.

The next section describes the research themes that I have pursued in my work as potential points of departure for a conversation on defining solidarity among the workshop participants. I will conclude with a final section on equity and inclusion as 'matters of care' [8]. Collating insights emerging from the workshop, I propose that we focus on the seams of our collective intersectional work on equity and inclusion to deepen our commitment to address these issues and inform the work of the CSCW, Social Computing, and ICTD community at large.

Inclusion as a process
An important turn in infrastructure studies has been the shift in analytic attention away from *infrastructures* (noun) to *infrastructuring* (verb) [6,10,11]. Rather than treating infrastructures as accomplished objects, analysis turns to complex and consequential processes by which infrastructures are achieved, maintained, and adapted over time and places. Infrastructures are neither fixed nor given, but always in a state of *transition* as different actors engage with often much larger and longer sociomaterial processes [5]. Thus, in order to analyze inclusion, I have focused on processes by which certain user groups are able to easily navigate the seams of such infrastructures at the expense of other marginal groups. The following three subsections outline the three interrelated themes that shape my research trajectory.

Infrastructural mediation of diverse relationships

Aadhaar is an intervention in the relationship between the Indian state and its citizen. It engenders affordances as well as limits for this relationship. Hence, my dissertation research centers on how Aadhaar mediates it. It is organized around key infrastructural processes of Aadhaar—enrolling into Aadhaar, adding Aadhaar numbers to other databases, and authenticating citizens' Aadhaar identity—as chapters to unpack how Aadhaar makes citizens visible (or fuzzy) in the eyes of the Indian state. It explores how visibility afforded by infrastructures, such as Aadhaar, is not just a method of state control; it also conditions a person's existence, participation, and rights as citizens. It conceptualizes *resolution* to address how (re)configuration of registration, circulation, and interpretation of citizens' data affect their visibility to the state. Citizens who are difficult to see through the state's Aadhaar-mediated gaze find it harder to secure welfare, and turn into *low-resolution citizens* of India. They are at a higher risk of being excluded from data-driven state bureaucracies.

Here, low-resolution citizens is not a stable group of data subjects marginalized by state-driven data practices, rather it is fluid with constant changes in its constitution as information technologies mutually shape their use. For example, we show in our work on inclusion in Aadhaar-enabled services [17] that inclusion in Aadhaar-enabled access to subsidized food grains is not simply an outcome of one-time processes such as enrollment and adding Aadhaar numbers to other databases. Rather, beneficiaries experience inclusion every month when they authenticate their Aadhaar identity to access subsidized food grains. Here the work of managing the data produced by fingerprint readers becomes tightly coupled with how data about beneficiaries is captured and (re)produced by Aadhaar-based technologies for welfare disbursement. Authentication data is increasingly becoming the foundation of how a welfare bureaucracy sees its beneficiaries. Thus, I argue that

seeing like an infrastructure, which mediates the relationship between data subjects and organizations collecting their data, provides better analytic access to the uneven processes that accomplish information infrastructures (or not) in practice, and the distributional consequences that follow from being rendered 'fuzzy' in the eyes of organizations.

Study the imbrication

Attending to the circulation of Aadhaar-based data records across various Indian government departments during fieldwork, I have often encountered partial overlaps or seamful spaces [22] between UIDAI and other government departments. Negotiations over these seams are important agents in the uneven appropriation of Aadhaar, affording certain paths for its use while limiting others [14,16]. I draw on the metaphor of a good stone fence developed by Lampland and Star [9] to study such seamful spaces and illustrate infrastructures as a complex mixture of durability and change. Infrastructures, much like standards [9], are an uneven arrangement of uncemented things such as discourses, plans, practical actions, architecture, and so on that partially hold one another up. Unlike the metaphor of stacks, which suggests that these things seamlessly layer on top of each other, the metaphor of a stone fence situates information infrastructures as imbrication of extant distributed practices with digital technologies. The social life of a data record is a trajectory of movement across seamful spaces within the imbrication that holds its relevance together. We have offered the maxim of '*Study the Imbrication*' [17] to call attention to such seamful spaces. The maxim is also a useful heuristic to analyze the disconnect, or torque [2], experienced by data subjects who find themselves in such spaces.

Emerging concerns of data publics

Finally, I document the emergence of low-resolution citizens as a distinct form of marginalized data public.

John Dewey conceptualized publics as social groups that coalesce around particular issues and express concerns diachronically as events (related to the issues) unfold over time and places [3]. Drawing on his work, I explore how data publics coalesce around problems of claiming Aadhaar-based government services that range from troubles in authentication while securing subsidized food grains [7] to being declared dead on record for old age pension [24]. Such data publics express themselves using methods such as public interest litigation against using Aadhaar, using right to information procedures to collect data on the implementation of Aadhaar-based services, and finally, using outreach mechanisms to create a campaign around resisting the use of Aadhaar. A right to food activist articulated her rationale for resisting Aadhaar to me in this way: "The issue is two-fold here. First, if we change our position on the project, then the government will not even do what it is currently doing to create provisions for people for whom Aadhaar does not work. Second, despite all our experiences that contradict it, the claims of usefulness of Aadhaar will be legitimized" (Fieldnotes, 28 October 2015). While an activist may want to offer a nuanced position on using Aadhaar for welfare disbursement, they also recognize their responsibility in representing the rights of people excluded from welfare because of Aadhaar. Drawing inspiration from these activists, I work towards creating a space where voices and lived experiences of the marginalized can be brought to bear upon the design, use, and maintenance of information infrastructures.

These three themes *together* make up my research trajectory that aims to understand how everyday lives of data subjects and data records mutually constitute each other. What implications do information infrastructures have on the very organization of society as they increasingly become the 'invisible background' of governance? What are the new social spaces that data subjects inhabit, and what challenges preclude their entry into such spaces? What does a 'data record'—as an identifier of a person—mean for their everyday life?

Conclusion: Inclusion as a Matter of Care
This paper outlines my approach to studying Aadhaar's design, use, and maintenance using the analytic lens of equity and inclusion. This focus has manifested in understanding inclusion in Aadhaar-based services as a process of mediation, studying the imbrication of Aadhaar with preexisting bureaucratic processes of welfare disbursement, and documenting the emerging concerns of marginalized data publics (low-resolution citizens) as they work towards navigating the seamful spaces between UIDAI and other government departments. These research themes offer a starting point for a conversation between workshop participants on practicing solidarity. How do we as researchers focused on marginal data subjects who face numerous challenges in representing themselves through their data records study and intervene in these challenges? How do we make sense of the seams between our collective work of rendering visible how different forms of power operate and intersect in the design and use of ICTD?

I believe that a conversation on practicing solidarity should begin with unpacking equity and inclusion as a matter of care. As de la Bellacasa argues that a matter of care is "not so much a notion that explains the construction of things than a suggestion on how those who study things can participate in their possible becomings" [8:100]. I am interested in pursuing a discussion on how our research mutually shapes the trajectory of efforts to sustain inclusion and equity in the design of ICTD. We actively (re)specify the meaning and impact of the questions we ask in understanding the unevenness of technology-based interventions. How we care is simultaneously an act of doing and an ethico-political commitment to the way we produce and represent knowledge about the use of ICTD. Thus, our collective efforts in the workshop at identifying the seams of our intersectional work and finding ways to bridge them is a generative opportunity to practice solidarity. After all, the seams that matter also engender conditions of possibility for the bridges that matter.

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