Certifying India: Everyday Aspiration and Basic Computer Training in Hyderabad

Kathryn Zyskowski

A dissertation

submitted in partial fulfillment of the

requirements for the degree of

Doctor of Philosophy

University of Washington

2018

Reading Committee:

Sareeta Amrute, Chair

Cabeiri Robinson

Priti Ramamurthy

Program Authorized to Offer Degree:

Anthropology

University of Washington

Abstract

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Kathryn Zyskowski

Chair of Supervisory Committee:
Sareeta Amrute
Department of Anthropology

This dissertation investigates the impact of new technologies and a technology-centric economy for low-income and minority students in Hyderabad, India. Based on fifteen months of ethnographic research at basic computer-training centers, this project demonstrates how computer education programs are a window through which to see how students intersect with new sociotechnical forms of control and security, how gender is performed in contemporary India, and how students find meaning in pursuing their dreams. In spending time with students in the classrooms and on the job market, I came to understand that an incredible amount of work comprises striving towards the future. To this end, this dissertation develops a central argument that aspiration, or the process of moving towards a desired future position, should be conceived of as labor. Conceiving of aspiration as labor shifts the focus from the future to the present work that goes into striving.

Following this labor entailed tracing students' sociotechnical entanglements with the computer including social media, email, medical diagnostic machines, and mobile phones. Tracking these materialities allowed me to see the labor that goes into preparing for imagining a

future in a technology-centric economy. Analyses in this dissertation are grounded in three strands of materiality including how students carry their bodies (embodiment), how students engage external technologies towards a future goal (artefactual), and how students imagine technologies as an extension of selves (prosthetic). In following the computer in the context of students' lives, I also argue for a more capacious understanding of the computer in India: the computer exists in multiple ways outside of the world of Information Technology. Attention to students' experiences show how access to new technologies simultaneously offers possibility and increased policing. Amidst this, however, I show how students aspire with playfulness and openness.

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ACKNOWLEDGEMENTS

Over the years I've accumulated debt to too many people to thank in Hyderabad. Thank you to the Ramanan family for opening their house to me twelve years ago and since then maintaining an open door policy. The University of Hyderabad has been my academic home in Hyderabad. Critical insights from Aparna Rayaprol, Vinod Jairath, and Rajagopal Vakulabharanam have helped direct my research. Sarveswar Sipoy, thank you for your skilled and prompt transcription work. Thank you to Anant Maringanti (and the rest of the Hyderabad Urban Lab) for challenging me to think acutely about Hyderabad's denizen's differential standpoints and the relationship between infrastructure and social life in cities (and for the many cups of *chai*). Thanks to Jeremy Brian, Shobha Gosa, Michael Jawahar Babu Ravari, Syed Shoaib Ali, Karan Kurani, Mansi Gandhi, and Neehar C. Reddy for after-work levity. Sujatha Ramni, Ali Husain Mir, Ashhar Farhan, Humera Ahmed, Elahe Hiptoola, Sridala Swami: you are the cool kids I want to grow up to be. Your endless creativity, staunch commitment to social justice, and fierce defense of *dakkani*, *aams*, and *shikampuri* inspires me daily. Rubina Mazher, thank you for welcoming my presence and for holding me accountable. To Mustak for laughter and timepass in the water room at CDS, and for helping me navigate Ameerpet. Last but most importantly, thank you to the students at CDS and SMART Centre for being open to my presence and for entrusting me with your stories: I hope I have done you justice.

This project would not have been possible without funding from the AIIS, FLAS, Fulbright-Hays, Wenner-Gren, and the Department of Anthropology at the University of Washington. I am indebted to my committee members Sareeta Amrute, Cabeiri Robinson, and Priti Ramamurthy for gently steering my interests and insights over the last five years of crafting this dissertation. I feel incredibly lucky to have been Sareeta's first advisee: thank you for

teaching me how to think conceptually while always starting with the empirical. I also greatly appreciated your tactical recommendations to writing a dissertation. It only became possible once I learned my own tricks (needing to step away from the computer) and found community and deadlines in the writing group you suggested. Cabeiri, your attention to detail and high expectations of students have inspired and shaped my teaching and scholarship. Your guidance on how to think and write about gender and critical insights in voice and positionality in anthropology have shaped this project. Priti, your regional knowledge, attention to lifeworlds, and constant reminder to how my interlocutors craft meaningful lives deeply shaped this project. While in Hyderabad, our conversations always steered me in the right direction. Leyla Savloff, Lily Shapiro, Amy Pedialue, Susmita Rishi, Nabeeha Chaudhary, Ava Holliday, P. Joshua Griffin, Stefanie Cruz, Darren Byler, Caleb Knapp, Jiwoon Yulee, and Samantha Simon all provided camaraderie and writing feedback at different junctures of the seven years of graduate school at the University of Washington. Mary L. Gray, thank you for suggesting a change of direction in my research sites and for introducing me to new bodies of literature that are now central to my work.

Thank you to my parents for supporting me in what may have seemed like a far-fetched endeavor. To Justin for coming to India that first time and for cultivating a warm home to return to each night. To baby Jade for giving me reason to finish.

CHAPTER ONE: INTRODUCTION

The Computer Beyond IT

I'm eating dinner atop a rooftop overlooking the city of Hyderabad with Srija, one of the students I met at a nearby computer-training institute, and her three roommates. The convivial conversation circled around selfies (which we had just taken downstairs), the serial television show playing on the screen, and job interviews. The conversation turned to linguistic differences between Andhra and Telangana Telugu, two regional and ethnic variations of the same local language. They playfully discuss whether there is any real difference between Andhra and Telangana, the new state carved out of Andhra Pradesh in 2014, or whether the issue is purely political.

From the rooftop of their hostel, on the sixth story, we could see miles in every direction of the city. The gullies and main roads of Ameerpet bustled below. Across the street was the bustling South Indian Shopping Mall and a steel store. To the left music and lights pulsed from Hanuman Temple. The view looking over the city – towards the lake in one direction, and in the opposite towards the wealthy enclaves in the hills leading towards HITEC City (Hyderabad Information Technology and Engineering Consultancy City, also referred to as Hi-Tech City)— gives the sense of a thriving, pulsating city full of opportunity. Dining above the city and socializing is often associated with a middle-upper class access to one of the many rooftop lounges, clubs, or restaurants in the city. However, these young women do not belong to the new middle-class or work in Information Technology. They are not enjoying this view by spending their expendable income from a job, rather, these women all found themselves in this neighborhood, in this hostel, in a pursuit of joining the IT industry in Hyderabad.

I met my host, Srija, at a computer-training institute in a building opposite the hostel: she chose the hostel for her living arrangements after identifying a computer-training institute. This night, Srija wore an unembellished blue kurta, and is wearing gold, South Indian designed earrings. Before dinner, I met her outside of the South Indian Shopping Mall, just down the road, to partake in some gift shopping. As we walked by the street side vendors she picked up a small toy bird for her niece and some snacks for her family. This weekend she would be going back to her village in the Guntur district of Andhra Pradesh. To get home, Srija will take a bus to the city of Vijayawada and then an auto out to her village, some 60km away from Vijayawada. This journey will take about seven hours.

Srija had bargained with her parents to delay marriage until after she landed a job and worked for a year. Srija has a college degree and MBA, but when she arrived in Hyderabad she applied for jobs, she found that some of the job interviewers told her to "go get a certificate and come back and talk to them afterwards". In pursuit of a computer certificate, she went to Ameerpet because of its reputation as a center for computer skills training. Srija's long-term goal is that she either wants to get married and then settle in a government job or what she calls a "big post" like HR. If neither of these works out, she plans to work in an office. The industry or position is not that important. She explains: "I just want to lead my life smoothly, that is my goal". I probe what smoothly means, and Srija explains that her parents will arrange the marriage soon, but the one thing Srija feels like she has control over is continuing to maintain some independence through continuing to work post-marriage.

As I rode home that evening in an auto-rickshaw, I thought about how the scene atop the roof with these four young women crystallized some of the questions driving this dissertation: Why did students come to take basic computer training when many of them already held college

degrees, or could get jobs that paid the same amount as the jobs they got at the outcome of the center? And what forces played into how these young women (and men) identified and understood their future aspirations?

This dissertation investigates the everyday impact of new technologies and a technology-centric economy for low-income and minority students. Focusing on these demographics allow me to demonstrate how technology adoption - and its potential for socioeconomic mobility – must be examined from particular points of view. As students engage computer classes, learning basic computer skills expands into experiences with new forms of control and security, a wider rubric of influences on the body, a changing city, and navigating job opportunities. As students meet each other, interact with teachers, and approach the job market, they also critique the present labor market and articulate their hopes and dreams.

The main argument I develop in this dissertation is that aspiration should be conceived of as labor, and that this labor is sociotechnical. By conceiving of aspiration as a labor, I resituate it back into the present moment away from the future. By claiming that aspiration must be understood in a sociotechnical context I theorize aspiration not only by engaging individual narratives but also by paying heed to the different kinds of materiality present in student's everyday acts of aspiring, and in the narratives they told me. Methodologically I articulate three strands of materiality that are part of the labor of aspiring in this dissertation: embodied, artefactual, and prosthetic. These refer to the different ways in which students narrated materiality to me: as a bodily experience, as material things around them, or as objects acting as extensions of themselves. Before I describe these themes in depth, I review my research methods and methodologies. Next, I begin my review with a section on understanding the context of computer training centers in India.

Tools and Frames

While many studies in India document the lives of those who acquire more prestigious levels of technical fluency, such as writing new code or performing analytics of data, I was interested in who was taking the basic computer classes. These basic computer classes taught skills ranging from typing to basic software and hardware, such as Microsoft Office and Excel, or how to take apart a desktop. I wanted to know who these students were, what their future aspirations were, and how their subjectivities were shaped by both the education and the technology. My focus on basic computer-training centers required a different set of methodological tools. From two centers, I followed a class of about 40 students through the certificate course and into the job application process. I spent three months at each institute as a participant observer.

While the government keeps close tabs on the number of formal education institutes in the city it does not track informal institutes. As these institutes exist in every neighborhood, I chose two institutes in distinct neighborhoods to reflect the uneven economic centers of the city. Attending two institutes in different neighborhoods of Hyderabad enabled me to follow how local histories are sedimented across the city and affect young students' thinking of the future. I gained access to the two institutes in different ways. After I chose the neighborhood locations I wanted, I attempted to locate institutes in the neighborhoods. I ran into a number of issues with access. At one institute I contacted, the head of the institute could not understand what I meant by a research project. He kept stating that I could not sit in on the classes and not pay, as that was not fair to other students. I offered to enroll as a paying student and he said I could not enroll as I

had too advanced a degree, that this was a basic computer course. After a few institutes being lost in translation, a friend introduced me to a woman who ran an NGO affiliated with the institute in Mehdipatnam. She had previously worked with a research scholar from the US and understood the everyday realities of my research project—that I would be sitting in the classrooms and participating in classes. In exchange, she asked for some volunteer help at her organization and to share my final product of research with the organization.

In Ameerpet, I visited a number of institutes based on their training – I wanted a center that specialized in basic training rather than higher-level trainings. At CDS, the head director's wife was there the first day I visited and understood my research project but said she would have to check with her husband. I came back the next week to meet him – he was fine with my research project but was concerned about me using the name of the institute. His concern was that as an institute that offered low-cost training to students, they regularly used pirated Microsoft Word software. He was concerned that if I used the institute name, Microsoft might become aware of this and shut his institute down. We agreed I would use a pseudonym. At CDS, although they charged money for the courses, they viewed much of what they did as a charitable practice and were especially interested in my concern for marginalized groups accessing computer training. At both institutes, as to not interrupt the normal cycle, I was only allowed to sit in on classes when a new batch began. On the first day of classes the instructor introduced me and my research project. At both institutes I provided my IRB sheet which was visually displayed in both English, Hindi, and Urdu.

By sitting in classes, I built rapport with students and learn about instruction practices of basic computer training institutes. By participating in student enrollment and administrative meetings, I was also able to follow the circulation of money to the institutes and learn how

students paid for (or didn't pay for) a computer certificate. Beyond the classroom, I engaged in participant observation of students' homes and non-school activities such as shopping for the family, celebrating birthdays and religious festivals. Spending time with students outside of the classroom gave me insight into things not discussed in the ever-positive classroom settings. Beyond the structured time in the classrooms, I spent an additional six months undertaking research outside of the classroom alongside students, such as going to the medical shop, participating in birthdays, and visiting students at their new jobs – a research method known as informal interviewing (Bernard 2011). I also completed 12 semi-structured interviews with administrators, development practitioners, and politicians.

All of the students at institutes (with the exception of one) I interacted with would be identified as lower-class or lower-middle-class. One of the institutes specifically targeted low-income families and students had to provide family proof of income in order to qualify for the free computer training. The other institute did not, but it did offer free training through a government sponsored program for low-income students. Those who were not part of the subsidized training programs I gleaned their family's financial status through conversations about technology at home, their parents' jobs and attendant salaries, and whether they received government scholarships through the reservation system for other education (secondary, intercollege, and college).

While the Indian poverty rate has fallen in recent years, researchers have found that rather than an expanding middle-class, those in poverty merely moved to the low-income category (Kochhar 2015). One metric for identifying is that poor live on $2 a day, or at the time of research in 2014-2015 around 100 rupees a day or 3,000 rupees a month. Low-income is identified $2-10 per day, or 3,000-15,000 rupees per month and middle-income identified as $10-

20, or 15,000-30,000 rupees per month (Kochhar 2015). Yet, within the categories of lower-class and lower-middle-class there is still a wide variety in access to wealth. Both looking just at incoming salary per month, but also families' a wide variety of access to wide networks of people and institutions that could help them.

A primary frame that underpins the inquiries in this dissertation, is the relationship of materiality and social life. Latour's (2005) *Reassembling the Social*, one of the most influential on the study of the relationship between material and social, posited both that social life was comprised of interactions and networks of people and non-people things, second, he posited that we must take the non-human things on equal standing as humans in these networks. This is formed from a critique in which he views approaches previously to separate science and the social. I trace the materiality in part to push back against the assumption that all digital technology looks and feels the same, and also to ground my analysis in its political and social effects in the everyday experience.

Following this, I am interested in the question that Poggiali and Trombley (2012) raise in their editorial on materiality and digital technologies: "What are the competing epistemologies and ideologies that undergird digital technology's production, and how are subjectivities made and remade in relation to them?". I also view this approach to digital technologies as part of a larger anthropological turn to engage non-human actors—be it forests, cows, or smartphones—as part and parcel to the human experience of making meaning. For instance, I show how much of the students' experiences is mediated by the technology of paper. This, in part, pushes back against an assumed break between prior technologies and the IT era, and against assumptions that the IT experience is immaterial. I also show how the remediatization of things such as written, paper letters to email has built-in cultural assumptions that privilege English-language

speakers on the global web.

To trace these different technological materialities of the computer in India, such as the desktop and the notebook, I use Hull's concept of the graphic artifact. Hull (2012) defines the graphic artifact as something that garners its power from its circulation through social life. While Hull's (2012) objects are primarily documents carrying the written word, I extend his argument to technologies. The various technologies discussed in this dissertation include infrastructural spaces, paper documents, cell phones, clothing, and medical diagnostic machines. He explains that people hold graphic ideologies about graphic artifacts: "what material qualities of an artifact are to count as signs, what sorts of agents are (or should be) involved in them, and what the roles of human intentions and material causation are" (Hull 2012: 14). This is useful in that it explains how representations are necessarily material: symbolism and value coalesce in materiality through social life. Next I'll move onto contextualizing computer-training centers in contemporary India.

Situating Computer Education in India

Hyderabadi trajectories

While much of this dissertation can be extrapolated to the wider Indian context, the student narratives and attendant arguments I build atop them only make sense with an understanding of the local context. Hyderabad is a booming city of nine million people and has recently gained a reputation as India's second largest IT hub, after Bangalore. I first lived in Hyderabad in the summer of 2006 as part of a study abroad program. Growing up in Seattle,

WA, I was familiar with the impact of large multinational IT companies. The founders of Microsoft graduated from my high school and my math classes were held in the Gates and Allen building, referencing the school's two most famous graduates – Bill Gates and Paul Allen. The influence spread throughout the greater city and colored my experience growing up. As I came of age, Seattle shifted from being a place of grunge, skateboarders, thick flannel (the unofficial outfit of my extended family), and outdoor enthusiasts to one with an identity as an IT, or Information Technology, hub in the world.

Studying abroad in India and traveling internationally for the first time in my life as a sophomore in college, I chose a study-abroad program in a city in Southern India that I had never heard of (Hyderabad) because I wanted to live with a host family and study at an Indian university, two things that my other study-abroad options in India did not afford. When I landed in Hyderabad, I was a bit dismayed to find that my host families home was one block away from Microsoft's only office in India. I felt as though Seattle had followed me on my big adventure to break away from it. Yet, unlike my home in Seattle, at this time, from the top of my homestay's rooftop, two stories high, I could look out over semi-agricultural land for miles in each direction. Walking home from the bus stop each day I passed a laborer camp, where laborers working in construction for new buildings lived for the duration of their contract in blue-tarped homes. The mixing of the soil and human toil involved in building gave hints of things to come.

I returned to Hyderabad many times between this first visit and the eighteen-month period I conducted this research and maintained ties with this family. But still, bringing my husband to their home for dinner, soon after arriving for research, I struggled to convey what the neighborhood and surrounding land looked like only ten years back. The house was now dwarfed by surrounding multi-story hostels, hotels, and restaurants to supply the IT workers in the Hi-

Tech City (a special economic zone for IT) workspaces. Today, while home to an increasingly visible middle class with a global outlook, large sections of the population struggle to fit into the city's new identity as a destination for world-class technology. While writing a decade after Fleuckiger (2006), I find her description of Hyderabad to be apt:

> While the city's landscape is changing rapidly with a burgeoning middle- and upper-class population and the proliferation of new high-rise apartment buildings, Internet cafes, and widened streets lined with "modern" glitzy stores such as Nike, United Colors of Benetton, Levi's, and western-style multistoried department stores, most Hyderabadis have little access to these. Coexisting with these newly configured cityscapes are traditional neighborhoods intersected with narrow gulleys and streets through which fruit and vegetable vendors pull hand-drawn carts and the pace of traffic is set by pedestrians, bicycles, and motorcycle rickshaws (28).

Many of my interlocutors lived in neighborhoods such as these, or lived in hostels like the one described in the opening of this chapter.

When I was first living with this family as a study abroad student in 2006, a riot broke out on the road from Tolichowki to the university. A lorry truck had plowed into a street-side fruit vendor. Rumors spread immediately – the lorry drivers were Muslim and had purposefully run into the Hindu fruit vendors. A mob of men coalesced in response and lynched the driver of the lorry; people reported groups of men stopping cars and checking for religious identity. This experience led me to research Hindu and Muslim relations in the city, along with the history of the city's large Muslim minority. Whereas Muslims make up 13 percent of the total population in India, in Hyderabad they are nearly 40 percent. Since Indian Independence, Muslims have been marginalized economically: a 2006 government report found that Muslims were worse off than low-caste groups in India (Committee and Sachar 2007). Since market liberalization in 1991, circulations of people both from Hyderabad to the Persian Gulf as well as the West have raised expectations of economic mobility (Leonard 2007). In the past few years, displays of solidarity on campuses at city colleges between Muslim and low-caste groups are gaining momentum – a

marker of different social groups finding common grounds around inclusivity in the new economy (Henry 2015). The city's history as a former Muslim princely state makes for a distinctive place to study minority access to education. These factors led me to focus on Muslim communities as one central group in this project.

Technological India

India has its own history with technology central to its development ideologies since independence from Britain in 1947. India's turn to the computer as the technology to spur development falls in line with a long list of technologies which promised to herald social and economic development. India's first Prime Minister, Nehru, held a strong vision of India's future based on promoting science and technology (Nehru 1988). Nehru believed that investing heavily in industry and technology would enable the country to stand on independent economic footing after 200 years of British colonialism. Part of Nehru's investment in science and technology was facilitated through the setting up of national institutes for technical education, including the founding of the renowned IITs (Indian Institutes of Technology). Prakash (1999) shows how science and reason were both transferred from colonial British rule, subsumed into the new Indian elites, and promulgated as a main foundation for the new modern nation.

The Green Revolution, a period in the 1960s when India invested heavily in increasing agricultural production through high-yield seeds and new technologies for irrigation and field maintenance, perhaps crystalized India's prioritization of technological developments as the foundation of social and economic development. Gupta (1998) and others argue that these forms of state development policies are a peculiar post-WWII sociopolitical ideology. Moving away

from mechanical machines and larger infrastructural projects, Arnold (2013) turns to everyday technologies of the bicycle, sewing machine, and the rice mill. He shows how similar discourses of technology and development were embedded in everyday technologies, and importantly how gender, race, and class were subsumed into the technologies. Abraham (1998) shows how India's quest to build and display its atomic bomb, rather than be about international security moves, was instead the culmination of India's self-image of a technological, modern nation-state. In the mid-1980s, with Rajiv Gandhi's government, India began to allow outside investment and foreign-owned technology companies to operate in India; these policy reforms were based on the assumption of economic development (Upadhya 2016: 43). However, be it with the bicycle or irrigation machines, India's post-colonial development policies have leaned heavily on technologies.

Discourse on IT in India

The Information Technology (IT) industry has been mostly codified as white-collar cognitive work in academic and popular discourse, while much of what comprises IT is intensely human, basic work that does not necessarily demand high levels of technical expertise. This contributes to the line of work that scholars such as Roberts (2016), on commercial content moderation, and Aneesh (2015), on call centers in India, have recently argued. My intervention into this line of scholarship is to tease apart what forces coalesce to produce IT and the computer as singular objects and show what else can be seen when we instead argue that there are multiple ITs and computers to take as research objects. Literature on IT labor and education in India interrogates contemporary forms of work, shifting gender dynamics, and consumption patterns.

A major theme in this literature is the expanding 'middle class' (Aaftaab 2012; Brosius 2010; Fernandes 2006). While scholars have chronicled the experience of striving to enter the middle class, few studies follow IT skills as a strategy for economic mobility (Chua 2014; Sarkar 2016). Instead, the chosen field sites for research on the burgeoning IT economy in India have been corporate offices (Aneesh 2015; Nadeem 2013). Others have focused on migration patterns driven by the emergence of the IT economy (Amrute 2016; Biao 2006). The few studies on IT in Hyderabad geographically situate themselves in the eponymous hub of the tech economy, Hi-Tech City (Aaftaab 2012; Guffin 2015), with the notable exception of Rangaswamy and Cuttrel's (2012) work on mobile practices in informal housing settlements in Hyderabad. While the studies on middle class formation and new spaces for work have elucidated our understanding of the texture of contemporary Indian IT, it has also worked to delineate IT to particular spaces and classes.

My project relocates IT away from the corporate institutions on the outskirts of the city that arose through a special government zoning that offered foreign companies cheap rent (partially from tax incentives), and instead locates itself in other neighborhoods. Scholars of IT in India have acknowledged that those who have made it in the industry are overwhelmingly Hindu, upper caste, and upper class (Amrute 2014; Biao 2006; Kamat, Mir, and Mathew 2004). Scholars have analyzed the gendered experiences women face in these IT spaces (Radhakrishnan 2011; Van Jaarsveld and Poster 2013) yet few scholars have looked at the everyday experiences of marginalized students aspiring towards better jobs by acquiring computer skills at the increasingly common computer training institutes in urban India. In this dissertation, I fill in this gap by looking at this. Without understanding the ways in which class, religion, and gender shape computer education in India, we cannot know whether computer education aids in

equalizing the playing field, fails to do so, or even exacerbates social inequalities.

Modi's Digital India

On July 1st, 2015, I sat in my apartment in Hyderabad and live-streamed Indian Prime Minister Modi's inauguration of India's first Digital India Week. After Modi's speech, the government announced and displayed the multiple products that would make up Digital India including a digital locker, computer-training programs for poor students, e-governance and e-health programs at the national scale. Two taglines stuck with me from the speech: the first was "IT+IT=IT", which he explained was shorthand for "Indian Talent + Information Technology = India Tomorrow". The second was "power to empower", referring to powering up individuals with physical digital technologies. At one point, they presented a low-income farming women on stage with a laptop with much fanfare (Modi 2015).

Modi, in his speech, made many references to the importance that Indians adopt new technologies or else the country won't develop. After the speech about 15 IT industry leaders from India, Japan, the UK and the US gave short, two-minute speeches in support of Modi's Digital India campaign. Modi's main push during Digital India week was that bringing digital technologies to the masses in India was India's lynchpin for catapulting itself to the status of a 'developed' country. Thus, his stance falls in line with a long history of believing in technology to enhance the economic standing of people. The belief that new technologies will disrupt current social status and make social mobility available to all is a long-held belief that can be traced in prior technological innovations (Karabell 2018).

Last year the United Nations Development Program (UNDP) announced its goal of

universal access to the Internet by 2020 (United Nations 2015). This development goal sees an increased quality of life produced by teaching people computer skills. While only 35% of India is currently connected to the Internet, the country garnered attention in recent years for widely adopting low-cost mobile phones and the widespread availability of tech training, much of which is found at ubiquitous small private computer training centers.

While Modi's development plan assumed direct economic benefit from learning how to use a computer, I found that many students secured jobs with salaries that could be earned in other industries. Many of these jobs were in the service industry, rather than a white-collar knowledge work job, with annual bonuses and insurance benefits. To give a brief sense of the types of jobs and attendant remuneration students received, I include a comparative table. I calculated the amount from INR to USD at $1 to 66 rupees.

Front-office secretary at local second-tier college	7,000 rs/month ($108)
Front-desk man at pharmacy	6-8,000 rs/month ($92-$123)
Cashier at chain retail clothing store or global fast food	6-7,000 rs/month ($92-$108)
Secretary to accountant at Bank	10-12,000 rs/month ($149-$179

Table 1.1 Examples of Post-Certificate Job Salaries

Entry-level job at Oracle or Google in Hi-Tech City	66,000 rs/month ($1,000)
Cleaner in apartments in wealthier enclaves of Hyderabad	9-15,000 rs/month ($134-$224)
Uber Driver in Hyderabad	18-90,000 rs/month (highly dependent on incentive schemes and payments that need to come out of salary) ($268-$1,344)

Auto-rickshaw driver in Hyderabad (post-expenses)	10-14,000 rs/month ($149-$209)

Table 1.2 Examples of Other Job Salaries

I include this table in order to point out that the difference in pay between the jobs my interlocutors received and other jobs in the city, both non-computer-related service jobs and jobs in the IT sector. This table raises questions that are at the heart of this dissertation. Why, if students could receive the same or more money for jobs not requiring a training certificate, do they come to computer-training centers? How is value imbued in work with a computer, and what work comprises 'computer work'?

Sociotechnical Striving

Aspiration and Developmentalism

The shaping of the modern subject involves material well-being and hope in the present. Sen's (1999) capability approach redefined an approach to development and the economics of poverty by stating that poor people's well-being should not be judged against an externally-produced rubric, but rather it should focus on how people themselves define well-being. Instead, the question should be whether they have the *capabilities* to achieve these goals. The capability approach is useful in that it removes the blame off of those in poverty and instead proposes that society has not provided people with the capabilities to achieve their well-being. It also recognizes that well-being is culturally defined and cannot be universally defined. Building off of the capability approach, aspiration—focusing on what people desire in the future—became a key concept in economic and developmental approaches to socioeconomic mobility. Building on

Sen's (1999) capabilities approach to development, Appadurai (2004) argues that the capacity to aspire could be developed as a cultural (and thus, group rather than individual) capacity, and that with the capacity to aspire as a cultural trait the poor could "find the resources to contest and alter the conditions of their own poverty" (2004: 1).

In Appadurai's (2004) article "The Capacity to Aspire" he argues that cultural matters are relevant for economic questions and that one's place, historical moment, and group affiliations have everything to do with how one thinks about the future. Appadurai (2004) rightly notes a temporal divergence between economic theorists and anthropologists and their concepts, respectively individual economic choice and culture. His argument for building the capacity to aspire melds Sen's capability approach to economic development with attention to cultural communities. Appadurai's (2004) conceptualization of aspiration moves out of the paradigm where culture and development are opposed He notes how the idea of development is always associated with the future ("future-plans, hopes, goals, targets"), while the idea of culture remains rooted in the past ("habit, custom, heritage, tradition") (Appadurai 2004: 2). In order to rectify this, he argues for anthropologists to place futurity at the center of thinking about culture. Placing futurity at the center of thinking about culture unhinges cultural analysis from always pointing back in history (ie 'cultural' as a descriptive term a tradition that has lasted centuries). He conceives of this capacity to aspire as navigational and describes upward socioeconomic mobility in terms of intersectionality – for those who hold social and economic power the path lining the way is thick and dense, while for others it is sparse and disconnected.

While Sen's ideas gained influence, they remained – like the earlier ideas on development – rooted in disciplines of political philosophy and economics (Jimenez 2008). Only in the last ten years did anthropologists begin to incorporate lines of inquiry on happiness,

wellbeing, and the good life (Appadurai 2004; Fischer 2014; Jimenez 2008; Moore 2011; Stewart 2007). Anthropologies of freedom, hope, and positive anthropology are closely related emergent bodies of literature. For instance, Fischer's (2014) book on wellbeing and values in economic choice in urban Germany and Guatemala tea plantations ends with a call for a turn towards positive anthropology. Whereas the 1960s (and then again, the 1990s self-reflexive moment) offered tools of critique and tearing prior paradigms and ideas down, the anthropology of hope may be in line with theories that can help us build things up.

Scholars theorizing aspiration often conceive of it as a gap between one's present and future desired material or emotional status (Appadurai 2004; Chua 2014; Fischer 2014; Ray 2006). Yet most of these elide the labor that goes into imagining the future and how that labor is embodied, with a few notable exceptions. Moodie's (2015) ethnography of *adivasis* and aspiration shows how aspiration is both group-based yet gendered: within 'one' social group aspiration is embodied differently. Naveeda Khan's (2012) employment of aspiration as a central framework through which to place her conversations with librarians, mosque leaders, and community members in urban Pakistan perhaps holds the most non-linear and open-ended account (Khan 2012). She utilizes aspiration to work against the notion of Pakistan having arrived at a stable state of Islam. She instead argues that Pakistan inherited a tradition of written open-endedness and aspiration and that those in Pakistan today still see it as an open-ended and evolving manner.

Most closely related to this dissertation are two recent works on aspiration and education (Chua 2014; Davidson 2011). Chua's (2014) scholarship identified suicide as a 'problem' of aspiration in her research in contemporary Kerala. What Chua (2014) refers to as expanded "aspirational horizons" include many of the signs that people have attributed to a 'modern'

Indian – these are linked to consumption and While Kerala has often been lauded as the most educated and upwardly mobile of Indian states, Chua's (2014) interlocutors point out that it is not the actual material or educational status that matters, but rather a relative status in relation to others –and one's own hopes and dreams. Many of Chua's interlocutors, in urban Kerala, India, have completed education degrees but have yet to find a good job. In the heart of the technology revolution in Silicon Valley, Davidson's (2011) interlocutors come from very different socioeconomic backgrounds: she follows and compares those of highly skilled technical workers as well as children of service workers in Silicon Valley. For my approach to aspiration, what is useful from Davidson's (2011) argument is that she clearly identifies how experiences of racism, classism, and other processes of exclusion affect students' ideas and hopes for the future in relation to the dominant culture. Similarly to contemporary Hyderabad, Davidson (2011) argues that the dominant culture of "techno-entrepreneurial values, skills, and social practices" loom over her interlocutors.

As a product of the Enlightenment, the future holds the promise of progress and subjects are made to orient themselves towards improvement of selves in the future. Both Chua (2014) and Davidson's (2011) conceptions of aspiration structures it as some event in the future that students can fail to reach. While aspiration is necessarily about the future, in this dissertation I re-orient the focus towards the present labors that comprise aspiring towards the future. I view the everyday materialities and bodily comportment in a dialectical relationship with aspiration: they are both productive of desire. In this way, I shift aspiration away from analyzing an event, per say, and instead focus on the doing – what are students doing in their striving? Steedman (1987) shows how aspiration expressed itself in everyday material objects when in the 1950s (post WWII austerity in England), women could afford to buy a bit more material for their

dresses, and full skirts with pleats became the object of aspiration (32). While it is clear how aspiration is linked to students' goals of getting a better job after learning computer skills, I also focus on the everyday labor of aspiring by paying heed to the everyday materialities that contribute to the desires and dreams students have and by paying attention to the ways students' shape their bodily comportment in this striving .

Aspiration in the Present

Here I want to discuss a different definition of aspiration, that of breath, that might help us escape this teleological paradigm (McDowell 2016, AAS). Let us begin with the etymology of aspiration. The contemporary use of aspire comes from the Latin *ad* (to) *and spirare* (to breathe) (Oxford English Dictionary 2013). The French term *aspirer* was the next step to finding its way into English lexicon on the middle ages, gaining usage in the 15th and 16th centuries. Finding this duality useful, I find the most apt contemporary definition to incorporate both "to have a fixed desire, longing, or ambition for something at present above one; to seek to attain, to pant, to long" (Oxford English Dictionary 2013). Aspiration may also be thought of as material and visual, for it is also closely linked to *spires*, those tall, material objects shooting upwards in the sky.

Yet, aspiration is more ephemeral than a spire, or tree, or anything reaching physically towards the sky. In theorizing aspiration anthropologists have so far neglected to employ its second definition, that of the mundane yet continual labor of breathing. While McDowell (2016) focuses on mundane aspiration in his research on tuberculosis patients and social power in northern India, I think the part of aspiration as labor that I wish to carry forward is that of

desiring, of panting. It is not just the everyday breath that we all do without a thought: to desire and long for things necessitates laboring – and part of this laboring is the shaping of one's body towards specific ends. And this body shaping may at times be a very public display, while at others may be an intensely private affair of trying on – in thinking about the future people try on various jobs, sartorial choices, places, and life partners. None of these should be seen as defining and bounded of an individual, rather they are the ephemeral moments that "rise up, as an exhalation" of the labor of aspiring (Oxford English Dictionary 2013).

While aspiration is often seen as an approach to studying futurity, my interest in problematizing the relationship of modernity and aspiration lies in the contention that the everyday labors of aspiring are telling us something about the present moment. Tsing (2015) offers a methodological way for trying to at least work around the paradigm of progress that is so deeply engrained in both technology and education. In her book on Matsutake mushroom worlds, she opens by asking this very question. She argues that to do so will yield different results:

> Twentieth-century scholarship, advancing the modern conceit, conspired against our ability to notice the divergent, layered, and conjoined projects that make up worlds. Entangled by the expansion of certain ways of life over others, scholars ignored questions of what else was going on. As progress tales lose traction, however, it becomes possible to look differently (Tsing 2015: 22).

The way the discourse of IT has been formed in India does not allow for my interlocutors' experiences to be considered as IT. Part of this problem is that from within this paradigm a singular Information Technology was produced: most people assume that a job in IT comes with attendant perks – a fancy office, a steady salary, and benefits. Yet many of these students—after taking a computer-training course—land different sorts of jobs: in NGOs, as secretaries in a college or pharmacy. Many don't find jobs with computers, and either return to previous jobs, such as vegetable sellers, or they pursue other forms of technical training that may lead to a job,

such as seamstress training. The other things that have come to symbolize IT in India – such as changing forms of dress, extra cash to spend on conspicuous consumption and leisure activities, and working within a global company—often are not the outcomes of students in these basic computer-training courses, but this doesn't necessarily mean I conclude that they are failures. In telling people what I do research on, a common question I get is "are the courses effective?". I find myself explaining that my interest lies not in analyzing the 'effectiveness' of the courses, but in the meaning made in and out of the spaces for my interlocutors.

Queer literature on alternative temporalities also contribute to the groundwork for my argument for aspiration to be viewed as labor that takes in the present moment. Edelman (2004) identifies that normative society holds the future for children, politically sidelining relationships with no obvious way of producing children. By stepping out of the heteronormative cycle of sexual and romantic relationships leading to children, queer relationships necessitate a different temporality not situated only in the future, and instead a politics of the present. What is useful in this literature is how refocusing is not saying that a future does not exist, but rather that thinking of the future in turn effects how one acts in the present. Munoz (2009) pushes back against Edelman and states that the present queer politics can only be understood in relation to a utopian future: a radical future that goes beyond simple political goals such as equal marriage rights. Munoz's (2009) articulation of the present work as made possible by a future orientation translates well to this project: I focus on the present-day labor of my interlocutors' striving towards the future, but their work is always future oriented. Importantly, Munoz (2009) shows how this always-future-oriented work in the present can imagine alternate futures.

That said, it might be easier said than done to think outside of the paradigm of progress; Tsing (2015) says that although we might claim to do so, we are surely attached to progress'

attendant ideas of "democracy, growth, hope, and science" (21). A methodology of looking around rather than looking ahead, thus allowed me to see the IT experiences of these students and see how the construct of IT has been shaped to quell their stories. I follow the stories in this way—I am not (at least solely) concerned with whether this training leads to a job or not. Their stories show that much of IT in India does not exist in the new fancy apartment buildings built on the edge of the city, nor necessarily the malls. I also argue that what these students, and their entanglements with technology, are doing, can be understood as a process of world-making. The worlds being made are necessarily uneven and attention to where power resides and flexes itself is paramount. I submit that by reorienting our view of aspiration from focusing on a teleological framework we can pay attention to the everyday labors of aspiring which lends sight to how the contradictions of labor, religion, class, and gender play out in this specific time and place.

Making Modern Subjects

Digital technologies, such as desktop computers and cell phones, are often talked about as symbolic of the 'modern' Indian. This is illustrated by the front cover of the popular book on Indian politics and economics book, *In Spite of the Gods*, where a man dons a turban while holding a mobile phone in front of a camel (Luce 2008). This image—the juxtaposition of 'traditional clothing' and 'modern technology' has become a paradigm in academic discussion in which to understand the adoption of technology in non-Western countries. Embedded in this juxtaposition are assumptions both about class and linear progress: the man on the cover of the book—with a camel's neck and head protruding from behind his head and a distant, blurred image of a group of people upon a sand dune—signifies both a lower-class person and one who

is temporally behind the time of the cell phone he holds in his hand.

In this dissertation, I try to move beyond this framework of modernity in two ways. First, I am concerned with exploring how modernity is produced within the class formation of lower and lower-middle-class students. Second, I follow scholars who dismiss binary models of modern/non-modern and argue for modernity as an everyday struggle that is full of contradictions (Group et al. 2008; Liechty 2002; Talukdar 2012). In *Modern Girl Around the World* (Group et al. 2008), the authors argue that similar characteristics of a modern women emerged globally at the same time in the 1930s. This disrupts the idea of modernity as unidirectional, emerging in the West and traveling to the rest of the world. Similarly, Talukdar (2012) work finds that women in Delhi choose from a variety of aesthetics and choose to "selectively fashion" themselves, eschewing the presumption that modernity works in unidirectional ways, bringing western fashions to India. In this dissertation, I operationalize aspiration to track the everyday labors of aspiring to show the multiple, ambivalent, and at times contradictory ways that my interlocutors produce the modern.

Embodied IT

Work on the performance and phenomenology of gender are useful in a project analyzing embodiment and how bodies are embedded in things. Butler's (2011) seminal work argues that gender is a performance. Building on literary theory which looks at the practice of citing, Butler (2011) argues that this performance is one that cites all previous performance of gender and that this citational practice in turn "constitutes the materiality of bodies" (xii). This materiality, she views, is the product of the power that the social reproduction of heterosexual people. For Butler

(2011), this performance is an iterative process that picks up power, reinforces the norms, and becomes increasingly constraining over time. Ahmed (2006) extends an inquiry into gender performance in her work on orientation.

Ahmed's (2006) intervention in phenomenology (which she turns to precisely because she appreciates phenomenologists' approach to bodies) is that previous theorists have taken things as they are for granted, instead of asking "why are things the way they appear?" (29). This question is also a primary starting point for an inquiry of orientation: we must understand what is behind where we are standing today in order to understand why we direct our attention (or orientation) ourselves towards things. This, Ahmed (2009) contends, is not only important for understanding the past but also the future. In her view, the collective moments of the past shapes how one acts in the present and future possibilities (Ahmed 2009: 41).

As an example, she argues that "it involves painstaking labor for bodies to inhabit spaces that do not extend to their shape" (62). This dovetails with Butler's (2009) work on the relationship of precarity and performativity. The relationship between precarity and performativity as hinging on the safety of the circulation of bodies and how they are read: "those who do not live their genders in intelligible ways are at heightened risk for harassment and violence" (ii). It not only entails labor to move in ways and spaces different than the generations before you, but doing so also puts bodies at risk. This labor of bodies inhabiting new spaces is one such example of the labor of aspiring documented in this dissertation. Orientation, for Ahmed (2009) is always directed toward the future as bodies have to face something and make actionable steps towards it. Ahmed's orientation allows us to see the embodied labor that goes into desiring or aspiring towards something in the future, and how a background understanding is necessary in understanding this labor. The students I met at the computer-training institutes

hailed from a diverse set of backgrounds and included Dalits, high-caste students from impoverished families, Muslims, dalit Christians, and Hindus from Telangana and Andhra. These divergent backgrounds meant that students held different understandings of their position in the city (and India) and in turn affected their desires and wishes for the future.

Noble and Tynes (2016) call towards an intersectional approach to studying the Internet and digital technologies invites scholars to approach analyzing digital technologies in two ways. First, they call for an "interrogation of the structure, activities, representations, and materiality of the Internet" as a necessary next step from leaning first and foremost on analyses such as gender and race (4). Second, they state that an intersectional analysis of the Internet looks at how cultural values are always embedded in the design of software and hardware (9). I argue that this doubleness of possibility and the policing of categories such as caste, gender, class, and religion in turn shows how technical labor markets demand certain forms of public presentation.

This dissertation in part contributes to a growing body of scholarship that shows that cognitive labor cannot be split up from the worker, or student's, body (Amrute 2016; Daniels 2009; Noble and Tynes 2016). One effect of viewing digital media labor and communication as immaterial is that embodied experiences of structural inequities with situated histories are often absent from analysis. Noble (2016) states that mainstream discourses, even in research, are unwilling to "engage with notions of racism, class, and sexuality in the fields of computer sciences, digital media studies, information, and technology studies". Amrute's (2016) book *Encoding Race, Encoding Class* argues that scholarship on what people have characterized IT as (cognitive labor, knowledge work, immaterial labor) imagines all of the IT working bodies as the same, without attention to difference. Amrute's (2016) work on Indian IT workers in Berlin instead shows how their bodies are black boxed into cultural stereotypes, propped up as fodder

(or comparison) for public debate about German identity, or enacted upon to perform leisure activities during and outside of work. Through these analyses, she shows how the body is pushed through IT work, and technology pushed through the body, from a variety of angles. Similar to Amrute (2016), while much of the research took place in a work-place environment, I found it critical to partake in outside of classroom activities with students in order to get a sense of the relationship of leisure, discipline, technology and the labor market play into students' whole lives.

One argument I set forth is that computer education can expose the most vulnerable students to an increased risk of being taken advantage of financially, bodily, or cognitively. This simultaneous opportunity and constriction is the contradiction inherent in modernity. One place that policing is evident is in cyberstalking experiences students faced online. This serves as an example of technical education not only leading to possibilities, but also to potential harm. Part of this hinges on how new technologies opens up opportunities for continued forms of older types of violence. This research counters the vision of interactions on digital media being disembodied and nonviolent. Losh (2016) pushes back against scholars who theorized online gaming as a sacred space outside of the everyday norms and concerns and then counters this with examples of how engaging in misogynistic norms, online, has real-world effects. She further argues that this is not new to online culture, but rather that gender-based violence has a long history in digital culture. In this dissertation, I demonstrate the state's response to cyberstalking follows patterns of responding to violence towards women that is dismissive and blames the victim.

Beyond cyberstalking, I show how women come to embody fear (of violence) as a result of rumors circulated on Whatsapp. The violence and attendant embodies fear is correlated to

another aspect of technology and bodies, that of increased surveillance. My research explores the affective experiences of perceiving an increased surveillance of bodily movement and phone conversations. Once again, contrary to a vision of digital media in which the online world is disembodied from the virtual world, an intersectional approach to these examples show how the bodies of vulnerable members of society embody this knowledge of surveillance.

Education and Social Reproduction

This dissertation traces the emergence of one form of education institution to show the multiple contradictions inherent in an assumed linear framework towards upward mobility. Along with technology, education institutions also hold social power as potential catalysts for socioeconomic mobility. However, anthropologists of education have long focused on the social reproductive power of education. By this I mean that education institutions also serve as social sites where things such as class, gender, ethnicity & race are reinforced instead of dismantled. Social reproduction theorists propose that education can be one process that contributes to inter-generational social inequality.

Anthropologists of education are interested in schooling as a social and cultural process. As the sites of research in this dissertation are computer-training centers, this dissertation contributes to anthropology of education scholarship by demonstrating how computer education centers are shaping students not only for computer jobs, but also as modern subjects in India. In terms of education, this project both investigates the everyday experiences of students at basic computer training centers and probes the historic and socioeconomic process that undergird the

emergence of this form of schooling and its role in the technology labor market in Hyderabad today.

While education has existed for millennia in India, formal schooling in India began as a colonial exercise. Cohn (1996) shows how the British colonials original project aiming to support and indigenous institutes of learning—he provides examples of the Calcutta Madrassa and The Sanskrit College, in Benares—failed as the British view of education institutions was one where: "buildings with physically divided spaced marking off one class of students from another, students' progress had to be regularly examined…the end of the process was marked by prizes and certification" (48). He shows that this political project worked counter to its intended goal and worked to destabilize indigenous forms of education. In 1800, the Company (under Lord Wellesley) famously set up a college in Mumbai with the aim of training young Indian men to serve for the British (Cohn 1996; Ghosh 2000). Aspects of colonial schooling that have been pointed out by scholars are a moral slant, memorization, and codification project (Cohn 1996: 49). That said, at the time of Independence, a number of non-British universities in Indian Princely States, including the famous Osmania University in Hyderabad, started by the Nizams (Datla 2013). However, at the time of Indian independence, schooling "occupied a prominent place in the imagination of the founders of post-colonial India" (Jeffrey, Jeffery, and Jeffery 2007: 3; Kumar 1993). Jeffrey, Jeffrey, and Jeffery (2007) demonstrate how in 21st century India, education is largely seen "as a tool for personal and collective development" (3).

Scholars of education in India have carefully traced the effects of the privatization of schools since economic liberalization in 1991 (Kamat 2011; Lukose 2009; Sawhney 2015). However, most existing scholarship looks at the formal education system. Literature on technical education in India has so far focused on elite institutions such as the Indian Institutes of

Technology, largely ignoring technical training at less prestigious institutions (Subramanian 2015). Few scholars to date have looked at the private institutes offering technical skills, which occupy a space that both augments formal education while building on a history of vocational technical training for India's lower-classes (such as tailoring institutes).

In the post-WWII, the belief in school's power to only be a force for good began to splinter, and in the sociology and anthropology of education, the idea of social reproduction of one's class status through education institutions began to rise (Collins 2009). The French sociologist Pierre Bourdieu was one of the most influential scholar on the social reproduction of education. He says:

> An educational system which puts into practice an implicit pedagogic action, requiring initial familiarity with the dominant culture, and which proceeds by imperceptible familiarization, offers information and training which can be received and acquired only by subjects endowed with the system of predispositions that is the condition for the success of the transmission and the inculcation of the culture" (Bourdieu 1973: 57).

One of Bourdieu's main ideas to emerge from this analysis was the concept of 'cultural capital', which refers to non-economic assets for social mobility, such as speech skills, education from the right schools, clothes, or the ability to converse about the new art show at the museum (1973). Building on these ideas, in the 1970s to 1990s, a number of ethnographies documenting the drastically disparate resources (material and social) between poor neighborhoods schools and wealthy neighborhoods schools in America (Kozol 1992; MacLeod 1995). As one example, MacLeod's (1995) ethnography of a low-income housing development in urban northeastern US finds that school boys—as young as middle school—lack hope about their future in America.

By the 1990s, the approach of social reproduction was deemed by many anthropologists as too structuralist and deterministic, and other approaches such as attention to "agency, identity, person, and voice" became preferred modes of analysis (Collins 2009). One main critique of

social reproduction as it focuses on class position and spends less attention to other social categories such as gender and race (Collins 2009). However, the other approaches have often produced similar results: often the process of going through schooling does not drastically change one's class position, and may in fact reinforce it. Dovetailing nicely with scholarship on failed aspirations, Jeffrey, Jeffrey, and Jefferey's (2007) book on college degrees in northern India shows that contrary to the idea that education will enhance the prospects of lower-classes, they found that after receiving degrees marginalized youth remained on largely unequal footing.

On the other end of the socioeconomic strata, Subrahmaniam (2015) demonstrates how upper-caste and class students at elite technical universities view their position as the product of merit, rather than that of cultural reproduction. Outside of class position, scholars in India have deftly shown how schools have promulgated narratives of India as a Hindu-only nation (Benei 2008). While my analysis doesn't rest solely on social reproduction theories—and engages concepts of intersectionality and aspiration to conceive of something beyond whether students attain upward economic mobility or not—I find social reproduction theories important for getting outside the idea that education automatically leads to progress or that people necessarily desire it.

Chapter Overviews

This dissertation tracks the everyday labor of aspiring for low-income students in Hyderabad, India. In this dissertation I demonstrate that both education and technology are filled with duality: they simultaneously offer possibilities and policing. While the dissertation is split into Part I: possibility and Part II: policing, as students often simultaneously experience both there are examples of policing in Part I and of promise in Part II. Further, while I show how

access and education of new technologies can expose students to new forms of risk, I also show how they inhabit and create meaningful life worlds. Part One is comprised of the introduction (Chapter One) and three additional chapters. Chapter Two tells the social history of the computer in the city of Hyderabad and the surrounding region. In doing research at two basic-computer-training centers in two different neighborhoods, I link the city's histories to the students' lived social experiences. I view the two neighborhoods that I did research in as both aspirational in relation to the city's newer IT corridor and can be seen as the 'new-old' and 'old-new' parts of the city. These histories are intimately intertwined with histories of caste, religion, and ethnic groups who comprise the city. This chapter next argues that two political-economic processes are critical in understanding the current environment in which my interlocutors, even those with college degrees, find themselves at basic computer-training institutes. The first is the arrival of Information Technology (IT) to Hyderabad city as a consolidation of Andhra social power in the region and the second, the over-proliferation of privatized colleges in the city that has led to a dilution of the college degree.

Chapter Three centers on the time spent in the computer-training centers. This chapter explores the pedagogical structure in the institutes and the multiple and overlapping types of literacy that comprise a digitally literate subject. These practices of literacy, such as typing, using a computer mouse, knowing how to navigate a smart phone, or collecting bureaucratic pieces of paper to prove ones' literacy are all part of producing oneself as a modern subject. Throughout this analysis, attention is paid to the embodied experience of students: how do the centers orient bodies in particular ways? How do people perform their IT-becoming? As literacy is part and parcel to the developmental mindset, the discourse elides stories of risk with learning new technologies and treats all subjects as universal and unmarked. Yet their bodies are marked in

certain ways that their peers can read—gender, class, caste, and religion—and the ways these bodies are marked as different, or performed, is woven into learning how to type or send an email.

Chapter Four asks, in part: what is a computer? Chapter Four counters the potted history of the computer as IT in India by introducing jobs that students from the computer-training centers aspired towards and received. At the computer institutes and in IT discourse, the computer exists as a singular object, the desktop. But I find that as I follow students past their lives in the institutes and in practice and work, the computer multiplies. My methodological question thus follows Mol (2002) and asks "what acts of coordination hold a computer together?" In this chapter I track how the divergent material objects (CT scan, stock broker algorithms, smart phone, desktop) all cohere to be the computer – and what social work this does for my interlocutors. I trace the multiple roles and material make-ups of the "computer"—which include CT scan machines, mobile phones, and cash registers—and look at what role the object of the computer plays in the making of a professional job. I found that what is iterative throughout these stories, what coheres them, is as much narration about what the computer *is not* as it is description of what *it is*. I conclude this chapter by looking at a narrative from one student about how work with a computer polices sexuality and opportunity on the job market. This leads to Part Two of my dissertation

Part Two of the dissertation is organized around how new technologies opens up new forms of policing. With a focus on risk, security, and spam I can show precisely how technology is spliced through bodies. In Chapter Five, I look at the experiences of two young Muslim women and how they are shaping and reshaping their bodies to fit into the technology labor market where one works with computers. In this chapter I trace the historically specific

articulations of gender, religion, and class in Hyderabad to think through how embodied forms of gender play critical roles in lower-middle-class Muslim women's experience aspiring to find work while in and after computer-training programs. Following scholarship that views modernity in a non-teleological way, I show how these women are producing what it means to be modern, and professional, in Hyderabad today by drawing on multiple aesthetic rubrics. How do these multiple, and at times seemingly contradictory aspirations for their bodies, have something to do with being professionalized? And how do women learn this? My findings illustrate not one uniform ideal woman but rather that varying senses of self that Shaheen and Nishaan inhabit.

In Chapter Six I focus on cybersecurity, rumor, and surveillance. This chapter includes narratives from urban Indian women about mobile phones' ability to see through clothes, listen in on conversations and spread unwanted information. I use this to look at the intersection of urban security, new technologies, and embodiment. This is inspired by Caduff's (2012) claim that the "semiotic logic of iterability" is central to security (341). Iterability marks both the repetition and change that accompanies a thing over time: I use it to theorize how new technologies – for these students – encompass both the promise of opportunity and bring new concerns about gendered security. This chapter analyzes embodied security at a moment when the body enters new avenues of circulation as informational. I argue that these experiences with new technologies produce new forms of embodiment and multiple forms of self-policing to protect one's body as students navigate trying to make it in urban India. I also look at the role rumor has played in South Asian politics and violence, and weave this in with the proliferation of rumors transmitted over computer communications, connecting it to 'fake news' literature. I also ponder the effects of being an aspiring young Muslim male in Hyderabad at a time when there is high surveillance for terrorism in a moment in history when terrorism is associated with high

technical fluency and institutions of technical education came under surveillance. I argue that those made susceptible to rumors and false news are precisely those who are already vulnerable.

Certifying India

I titled this dissertation *Certifying India*. This title takes its inspiration from the central nodes of my research: the computer-training centers that deliver certificates to students at the end of a course. Yet, the meat of this dissertation is not centered in the institutes. The stories that comprise this dissertation were also gathered over pots of simmering chai in a kitchen, in the waiting area of a pharmacy office, or in a government office. To certify means a few different things. One meaning is to "attest by formal or legal certificates" (Certify, v. 2018). But to certify also means "to make (a thing) certain; to guarantee as certain" (Certify, v. 2018). Much of this dissertation looks at the everyday labor students engage in in trying to make certain a life they pursue. They envision this life as part of India's new face: the computer classes, India's new focus on Digital India, and the new personal technologies in this dissertation all promise to make modern and technically savvy its subjects.

Yet this dissertation also points out the ways things are not 'made certain', but rather are ambiguous or unstable. Women are uncertain whether they are safe to move across the city with mobile phones serving as personal surveillance technologies. Men go back and forth about whether an email-delivered job offer is certain. Playfulness, joy, and sensuality pops up in experiences that could be read as pure narratives of failure. Handling these contradictions, this dissertation is about how ideas about the labor of molding things as certain, or destabilizing things that appeared to be certain. A third definition of certify points towards the inner work that

this dissertation tracks: “to make oneself certain”(Certify, v. 2018). The process, therefore, does not begin or end with the “certificate” centers, though getting certificates is a primary means through which to entail to make themselves legible.

Part One: Promise

CHAPTER TWO

City and Regional Political Histories

In this chapter, I turn to the past in order to understand the background information necessary in order to read my interlocutors present-day experiences and future hopes and dreams. I begin by introducing the readers to my two research sites, CDS and Smart Centre, and their localities – respectively the neighborhoods of Ameerpet and Mehdipatnam. The second half of this chapter expands beyond the two neighborhoods to tell the history of social power in Hyderabad (and the broader region) playing in the background of this dissertation: the consolidation of social power in one regional ethnic group, the Andhras, and the privatization of colleges. Critical in understanding these two stories are also the status of minorities and regional castes.

Much of this chapter comprises of looking back at certain groups aspirations towards building Hyderabad as a center of IT – and it traces the group-specific labor in the 1970s, 1980s, and 1990s that made the landscape my interlocutors entered in the 2010s. In tracing the neighborhoods, I build on arguments that spaces effect the way bodies move in them and effect ones' perspective. This chapter thus documents artefactual materiality – that of human-built buildings, pathways, schools, and classrooms. And within the neighborhoods the things – foods, stores, advertisements –that make up the daily environments. These build a background for the following chapters that expand on narratives of embodiment. Their embodiment draws on these infrastructural and artefactual surroundings.

The questions this chapter addresses the following questions: Why are students taking basic computer classes if they already hold college degrees? How do the different neighborhoods in Hyderabad both contribute to the image of Hyderabad as an IT centre, and simultaneously tell

us about the variegated lived experiences in the city? And, what background information do we need to know in order to understand how students orient themselves toward the future, and, in turn, direct their labor in the present?

Ameerpet and Mehdipatnam

Figure 2.1 Ameerpet street and Annapurna Apartment Complex

I am on the second floor of Annapurna Apartment Complex in Ameerpet – Hyderabad's pulsating center of tech training. People hail from all over the city, and beyond, to attend computer-training courses here. The manager of CDS, the institute at which I am doing research, tells me in a soft voice, "If you go anywhere in the world, you will find people working who have trained in Ameerpet only. Silicon Valley, Australia, Canada – Ameerpet has a world-renowned reputation." More than 100 computer education institutes are packed into the buildings comprising the Annapurna Apartment Complex. Signs advertising the institutes and their services cover the entire side of the buildings, hiding the drab weathered concrete under bright blue, yellow, white, and red large plasterboards detailing the courses available: "MS OFFICE. TYPING. C++. SALESFORCE. TABLEAU. DESKTOP. LAPTOP. MOBILE

PHONE. CHIP LEVEL. TABLET." The ground mirrors the building sides, littered with pamphlets advertising special training sessions, places to buy discount software, and renowned trainers.

Figure 2.2 Education and job advertisement pamphlets in Ameerpet

On the ground level merchants refill ink cartridges with syringes, fix any mobile phone screen in one hour, and recycle any type of computer part. Fueling the students, vendors, and instructors are a few *chai* and coffee stalls and a *mirchi baji* vendor, the highly sought after Hyderabadi fried green chili snack.

Figure 2.3 Training centers in Ameerpet

Ameerpet tells a social and economic story about Hyderabad. In 1984, the state government started its quest to become a global IT center by moving the Computer Maintenance Corporation (CMC) to Ameerpet. CMC began as a government-run institution chartered to create government IT solutions and a national electronic communication network. Following economic liberalization in 1991, CMC became a private company. Ameerpet is located around neighborhoods that are comprised primarily of migrants from agricultural and coastal Andhra Pradesh, otherwise known as ethnic Andhras. Since Indian Independence, ethnic Andhras – who are mostly Hindu – have been heavily criticized for consolidating power in both government and private sector jobs, as well as education (Biao 2006). The ethnic Telangana community and the city's sizeable Muslim minority have criticized this consolidation of power; this criticism contributed to mobilization for the creation of the new state of Telangana with Hyderabad as its capital (Pingle 2014). The state of Telangana was established, after years of political maneuvering in June 2014.

CDS

The CDS center is in center of Ameerpet in the building opposite Maitrivanam, the Aditya Enclave (Building I and II). Aditya Enclave includes two large, four-story apartment buildings that have over the years been repurposed into IT training centers for various software. In Ameerpet, training courses vary from basic training (typing skills, email skills, word-processing skills) to higher-level software skills such as Hadoop (a software that manages big data) and AutoCad (a software that engineers and architects use to digitally reproduce buildings). Many people commented to me—when they heard that I was doing research in Ameerpet—that

if you wanted to know what was much-needed skill in the IT industry globally, all you had to do was come to Ameerpet and look at the courses offered. In 2014-2016, while I was conducting research, if you applied this theory, Big Data and cybercrime were two of the hot-hitters. As my focus is on basic technical training, I identified an institute with a cohort of students studying basic software skills.

The CDS institute was one of five training institutes in a packed hallway on the second floor in Aditya Building I. CDS describes itself as a "leading IT training, educational, self-employment, consultancy, and development center offering state-of-the-art placement oriented courses" (website, 2015). The courses offered in the CDS catalog read as: "Hardware, MotherBoard, LCD, LED & SMPS, LAPTOP, PRINTER, MS – OFFICE, WORD, EXCEL, AUTOCAD". The cost for individual courses ranges from 1,500-2,000 rupees for each course (1-3-month courses), though typing is separate and only costs 1,000. Many students take a typing course concurrent with other courses. The institute can offer fully-funded scholarships for the courses of MS Office, Typing, and Basic Hardware to students who qualify under the government program SDIS (Skill Development Initiative Scheme). To qualify, students must have a minimum of 10th grade education and qualify on the basis of family income and SC, OB, OBC, or minority status.

The CDS institute is at the end of the hallway and is comprised of four distinct rooms. One room is the typing practice room; this room is packed wall-to-wall with manual typewriters. This is where students who are taking the supplementary typing course practice. Across the hallway from the typing room are three classrooms, all connected to one another. Two have large, three-by-five-foot monitor LCD screens on the wall (with the just-purchased stickers still on the monitors) and rows of plastic chairs; this is where the software courses meet for lecture.

The room next door is a series of small rooms where the hardware courses meet – these rooms are strewn with old monitors, motherboards, wires, and phones. Across the hall from these classrooms is the computer lab: this is where students who are taking a software course come for practice, for each hour of class you get one hour practicum (sans instructor) in the computer lab while the next hour's lectures happen. Students sit in blue and red plastic chairs.

While the upper levels of Aditya Enclave are packed with training institutes, the ground level is full of supporting and related industries: computer repair shops, a stationary store, a printing-ink refill station, a phone-screen repair shop, and a XEROX shop. There are numerous passport-photo processing shops as well as passport-processing shops that help advise students, if they receive a visa to work abroad, how to go about the process. Additionally, there are *chai* stalls and *chaat* stalls to keep students perky and satiated; a pharmacy, and a *khadi* cloth shop.

Figure 2.4 Stores in lower level of Annapurna Apartment Complex

The drive from Ameerpet to Mehdipatnam, bisecting the city, usually takes about 45 minutes in the city's heavy traffic. Mehdipatnam, where my other research site is located, tells a different story of the city. Azizia Mosque, one of the largest in the city, marks the entrance of the main road into Mehdipatnam. Scooters and cars parked for Friday prayers take up three out of

four lanes across the highway. On the street corner, two out of the four restaurants advertise Arabic food, something that has gained in popularity together with Hyderabadi laborers returning from the Gulf. This pathway for economic mobility looms large in the imaginations of students at this center; many relayed that though they would prefer to stay in Hyderabad, they will instead try to go to the Gulf where the dollar is 'bigger'. However, scholarship on Indian migration to the Gulf also shows that realities often contradict imagined labor abroad (Vora 2013). The shops surrounding the center reflect a regular neighborhood community - the pickle vendor, the guy who fixes tires on bikes, the Xerox shop, the general store with piles of bulk dried fruit laid out in front, the *casme vala*, or eyeglass store.

The city's history and culture as a former Muslim princely state make for a unique place to study minority access to education and economy. Whereas Muslims make up 13 percent of the total population in India, Hyderabad is 40 percent Muslim. Since Indian Independence, Muslims have been marginalized both economically and socially: the 2006 Sachar government report found that Muslims were worse off than low-caste groups in India (Committee and Sachar 2007). In spring 2016, displays of solidarity on campuses at city colleges between Muslim and low-caste groups are gaining momentum – a marker of different social groups finding common grounds around inclusivity in the new economy (Henry 2015).

Mehdipatnam began as a suburb of the city (when the city limits of Hyderabad were much smaller) where land was cheap; now the neighborhood sits in the heart of the bustling metropolis. After Hyderabadis started going abroad in the 1970s to work in the Gulf, many returned to Hyderabad and bought buildings in Mehdipatnam. Most of those who went to work in the Gulf were Muslims, as they struggled to find work in Hyderabad. Today, hardly anyone living in Mehdipatnam owns their property—most landlords have moved to more upscale

neighborhoods further towards the 'new' city or continue to live abroad. Mehdipatnam was the new city in Hyderabad in the 1970s and 1980s, though now it marks a central point along the road from the Old City and the newer developments out by Hi-Tech City.

SMART Centre

SMART Centre is located on the second floor of a multi-story building in the Mehdipatnam neighborhood. It is about a half-block past the Amba Theater, an iconic neighborhood movie theater that harks back to the neighborhood's development in the 1970s. On the first floor is a bank, and on the ground floor is a bakery and (convenience store). The center sits on the corner of an intersection, which also includes a pharmacy, ATM, silver shop, tailor, and a XEROX shop. The institute sits on an arterial road, so shared auto-rickshaws and buses pass by in a steady stream. The neighborhood, as I previously mentioned, is primarily residential beyond this main street. The building opposite the institute in the alley was a residential apartment under construction, and students in the computer classroom looked straight across to the construction site, watching women and men continually going up and down the floors carrying cement atop their heads. On the ground floor of the building there was a small parking space for scooters.

Figure 2.5 Mehdipatnam street corner

Outside of the center sat a security guard. This security guard kept a list of current students at the institute and checked them off as they entered. Shoes were taken off and left outside the entrance on a thick fabric. The SMART Centre, like many educational institutes catering to Muslim students in the city, offered different timings for women and men batches. The timing for women, when I began going, was 9:30-12:30, which mens' timing was 1:30-4:30. This timing changed once the heat of the Hyderabad summer hit, and it was considered unsafe to be outside traveling during the heat of the day.

Figure 2.6 SMART Centre computer classroom

Upon entering the institute, there is a main room with two desks: one to the left and one off to the right, with a bookshelf and table with current newspapers by the windows. The desks were for the institute intake (students signing up for the next course) and the placement officer (the guy whose job it is to place graduating students in jobs). Off the main room there were five rooms: one computer room, one room for teaching English, the institute manager's main office, an empty room used by staff for breaks and lunches, and a small kitchenette for the office-boy (an institute graduate) to provide regular chai to the staff. The computer teacher's desk was in the computer room, and the same for the English teacher's. On the walls of SMART Centre were various motivational posters, admonishments that say "Speak in English Only", and various branded posters. Aneesh (2015) notes similar signs and posters on the walls of call centers in New Delhi, and comments that these are part of a strategy to mold students to "adopt traits that were conducive to global communication" (loc. 1004). On the wall to the right when you enter the room, there is a large sign announcing the institute and its affiliations: "Tech Mahindra – SMART Vocational Training Centre – SAFA".

SMART Centre is one of the many basic technical training centers in India that is largely funded by the corporate social responsibility wing of a large technology organization, in this case, Tech Mahindra. Because of this the technology used in the institute is provided by Tech Mahindra, and the course is free for all students who take it. Tech Mahindra's model is to find local organizations working in neighborhoods they have identified for the centers and to partner with these organizations for hiring and local management. This SMART Center partnered with an organization working in the neighborhood on women's empowerment. The tech center was run entirely independently, but they were invited to larger events put on by SAFA, such as an

event on International Women's Day, where some students from the institute opted to craft speeches on their future dreams for a speech competition.

There were five staff members at the institute: one computer instructor, one English instructor, one institute director, one office-boy[1], one recruiter, and one placement officer. There is high turnover at these institutes in staff, and over the course of the year I saw three English teachers, two directors, and three office-boys. Batches of students came in three-month chunks. I spent three months sitting in on classes with one batch of students, and these are the students I followed beyond the institute. I continued to go to the institute past the three-month mark at regular intervals for the duration of my research. Below is a picture of the inside the computer room at SMART Centre.

In doing research at two computer-training centers in different neighborhoods, I link the city's histories to the students' lived social experiences. These histories are intimately intertwined with other histories of caste, religion, and ethnic groups who comprise the city. This chapter traces two larger political-economic processes that are critical in understanding the current environment in which my interlocutors find themselves learning computers. First, the arrival of Information Technology (IT) to Hyderabad city and second, the proliferation of privatized colleges in the city. Through these two processes, my aim is to introduce the readers to the social, political, and economic landscape into which I entered to do my research. This centers on political transformations over the 20th and early 21st centuries, along with histories of three main social groups in Hyderabad: Andhras, Telanganas, and Muslims. Woven among my different sections are some overarching themes of geography, economics, policies, and infrastructure that influenced things leading up to the contemporary moment.

The New-Old and Old-New

Ameerpet and Mehdipatnam offer different, though not opposite, perspectives from which to study socioeconomic mobility through technical education in the city. Both neighborhoods can be categorized in what Anant Maringanati, of Hyderabad Urban Lab, refers to as either the 'new-old' city (Mehdipatnam), or the 'old-new' city (Ameerpet). Using these labels both geographically and temporally this situates these two neighborhoods between the 'new' city – that of Hi-Tech City (a special economic zone built for Information Technology) and its surrounding neighborhoods, and the 'old' city – the area across the Musi river and the 15th century *gallis* around the iconic Charminar, a monument built in 1591 widely considered the most recognizable icon of Hyderabad. The four main roads leading out in four directions from the Charminar symbolized the core of the city for almost 400 years. The Old City today is still a bustling bazaar and the Charminar remains as one of the most visited tourist sites in the city. The Cyber Tower, in the center of Hi-Tech city, is an icon that now represents Hyderabad alongside the Charminar.

Both neighborhoods represent aspirational Hyderabad with an orientation towards Hi-Tech City. Whether or not my interlocutors clearly expressed wanting to work in Hi-Tech City, they mentioned and oriented their computer-training with the opportunities in Hyderabad since it became an IT center in India. Others clearly articulated their idea of someday getting a job in or around Hi-Tech city. Scholarly attention in Hyderabad has focused too much on either the new city and studied IT only in the confines of Hi-Tech city and its surrounding areas (Aaftaab 2012; Biswas 2004; Das 2015; Malhotra 2002), with the notable exception of Rangaswamy and Cuttrell (2012), with their work on mobile phones in informal housing communities in

Hyderabad. The Old City, on the other hand, was over studied by those looking at Muslim experiences and socioeconomic mobility (Leter 2015; Minda Yimene 2007; Mohinuddin 2015; Naidu 1990). By looking at these neighborhoods together I was able to speak to the concerns and experiences of different communities in the city, but to at the same time analyze them both as aspirational places with reference towards the 'new' city and its IT offices. As you can see on the map below, both Ameerpet and Mehdipatnam lie roughly half-way between the 'old' and 'new' cities.

Figure 2.7 Map of HITEC City, Ameerpet, Mehdipatnam, and the Old City

Students, of course, traveled from outside of these neighborhoods to attend computer-training courses. Students traveled from Lakdikapul, Sanath nagar, Krishna Nagar, Yousefgouda, Afzalsagar, Nampally to get to the center in Mehdipatnam. Students traveled from all over the

city, and other states such as Andhra Pradesh, Telangana, Karnataka, and Maharashtra to attend the center in Ameerpet. One main difference between lifestyles of students at the two centers is that some students I met at Ameerpet lived in hostels, a sign of students traveling from outside the city without family to stay with. Or the sign of families with more expendable income who will invest in their sons or daughters staying close to training centers in hopes of the training paying off with a good job.

Genealogies and Futures of a City

I had driven out to interview a technology policy professional who was instrumental in setting up the Information Technology infrastructure in Hyderabad. The cab I am in gets stopped at the entryway to his gated community. I give Ja's name and explain that I have a scheduled meeting with him. After calling ahead to the house, they finally wave my car through. The exclusivity of the gate and its security guard countered the busy, central neighborhood where I live in. As we drove past the gate and entered into the complex, I was struck by how American suburban it feels – there are wide streets devoid of people, gardeners working in front of the homes, and it is eerily quiet compared to the dense, bubbling neighborhood I reside in. The community is a short drive from Hi-Tech city and the Hyderabad offices of many international technology companies, such as Microsoft and Google. Srivastava (2015) argues that gated communities mark a shift in India's relationship to spaces and idea of ideal national citizens. He argues that in 21st century urban India gated communities, rather than the nationalized steel towns in the mid-20th century, become the locus of individual and familial transformation to domestic spaces: the front lawn, kitchen, and bedroom become "grounds for the making of a global Indian modernity" (Srivastava 2015: 119). Gated communities link Indian modernity and

contemporary citizenship to global circulations of capital, in part, he argues, by appearing to look like a space might in Australia, Canada, or the USA.

I met Ja in order to hear about his involvement with setting up the Information Technology sector in the city – I had been told that he was instrumental in pursuing the Special Economic Zone application for the original plot of Hi-Tec City, and building the now iconic Cyberabad building. Similar to experiences anthropologists have had interviewing experts, I find that this 'interview' is going more or less along the lines of Ja talking for long bouts of time, and me trying to squeeze in a question. Ja is a powerful man in the city and is clearly used to hearing himself speak. He interrupts every once in awhile to ask if I want more chai, or water, and then orders his cook to bring it out for us. Also, similarly, the story that Ja tells me of Information Technology arriving to Hyderabad mirrors the dominant narrative that the state tells of its rise, though Ja places himself at the center of this narrative.

At the end of a long interview, I asked him about his thoughts on the future of Hyderabad. He immediately answered:

> I think there is a very big boom coming. What I see for the next phase of Hyderabad is that start-up and technology product companies will start coming from Hyderabad. of That's what the third phase of the Hyderabad. We will see made in Hyderabad products from Hyderabad.

On the drive home I find myself pondering over Ja's articulation of the three phases of Hyderabad and wonder which timeline he is referring to. What were the past two phases? One timeline could refer to the 'first phase' of Hyderabad as starting when the erstwhile city-state joined India in 1950, a few years after India's independence from Britain. In this timeline the 'first phase' refers to the post-Independence period from 1950s – 1980s of the state of Andhra Pradesh, with Hyderabad serving as its capital.

Figure 2.8 Map of Pre-2014 state of Andhra Pradesh

During this period the city went through the process of transitioning to a state within the republic of India. This period of transition was not immediately one of economic prosperity: some businesses began to flourish, such as pharmaceuticals, but the city lost a lot of economic ties that the Nizam (the city-state's erstwhile ruler from the 1724 until 1948) had built up, while many of the city's wealthiest patrons left after Independence (Leonard 2007). In this timeline, the second phase of Hyderabad would reference the arrival of IT to Hyderabad beginning in the 1980s.

Or, perhaps, he was referring to another timeline. In this one, let's say the first phase of the city covers the period of Nizam rule over Hyderabad, from the years of 1721-1948. The Nizams were the former Muslim rulers of the princely state of Hyderabad, a geographical area that covered parts of the contemporary states of Andhra Pradesh, Telangana, Karnataka, and Mahrashtra. Below is a map of the Nizam-run Hyderabad city-state.

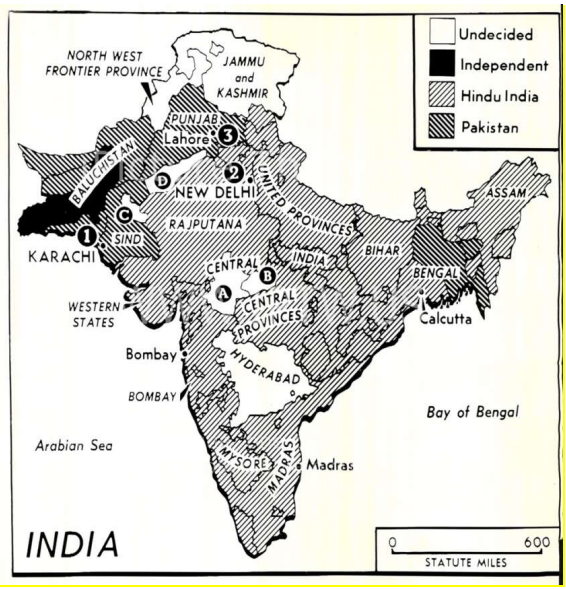


Figure 2.9 Map of Nizam's Hyderabad (Pre-1948)

During this time Hyderabad became an economic and cultural center not only of north and south India, but beyond; the Hyderabad court hosted and employed people from all over the world (Ali 2002; Leonard 2007). Under the Nizams, Hyderabad became a major hub of trade, including the city's famous pearls, and gained notoriety for its cultural and educational institutions, such as Osmania University (Datla 2013). When India secured independence from the British, the state of Hyderabad was so powerful at the time that the British asked whether they wanted to join India or Pakistan; the Nizam opted out and said that he wanted to maintain an independent state (Hyder 2012). The Independent Hyderabad lasted until 1948 when the state of India invaded and imposed a military government (Hyder 2012). In 1956 the state of Andhra Pradesh was created and Hyderabad made its capital. The second phase of Hyderabad, then, would be the period from post-Independence era to the present.

For my interlocutors, different moments mattered most in these different timelines of the city. For instance, many of the Muslim students I worked with have been in the city for decades; their grandparents or great-grandparents worked in some way for the Nizam government, either

in the city or in the Telangana region. And for many Telanganas, the history post-Independence is marred by a feeling of Andhras ruling the government and business in Hyderabad, while the Telangana half of the state received little attention and development (Maringanti 2010; Benbabaali 2016). This, in part, led to the splitting of Telangana from Andhra Pradesh into its own state in 2014.

Another part of this history is the rise of Hindu Nationalism in post-Independent India. While Hyderabad has a reputation for being religiously syncretic, the rise of Hindu Nationalism led on a national scale seeped into Hyderabad in the 1980s and 1990s. After the worst riots broke out in the city, after the Ayodhya incident in 1992, city inhabitants began to move out of neighborhoods where they were minorities and the city became segregated along religious lines. Communal violence marred the city, and particularly the Old City, during this time (Kakar 1996). Today, very few Hindus reside in the Old City, a marked difference from the 1970s and before. In one neighborhood, Purani Haveli, I met the one remaining Hindu family; they share food, holidays, and family duties with their Muslim neighbors, a rarity in the political climate. With Narendra Modi being elected, Hindu nationalist fervor, and its attendant Islamophobia, has returned to India, something that will be touched on throughout this dissertation.

Hindu nationalism has resurfaced as a major part of politics since Narendra Modi's election to Prime Minister in 2014. Prime Minister Narendra Modi's developmental push for technology since his election in 2014 is coupled by his allowance of right-wing Hindu nationalism to rear its head again. In the last two-plus years since his election, politics around cow slaughter and eating has once again become a big topic in India, with some states even banning cow slaughter (at the expense of its income from selling cow). Over 100 Muslims have been lynched, to death, by vigilantes accusing them of eating cow (Abraham and Rao 2017).

Modi was elected as a businessman and ran a campaign defined by its reputation of running an excellent social media. The simultaneous pushing for 'digital for all' while allowing the proliferation of groups whose mission statements are to have a Hindu-only nation makes clear that his campaigns have never been for equal standing of all people in India.

In 2014, the state of Andhra Pradesh split into two after a national vote that solidified Telangana's fight for its own state, reflecting the feeling that those belonging to the Telangana region of the state felt as though Andhras held a monopoly on power and resources in the state. Andhra Pradesh first emerged in 1956 as the first linguistically organized state in India, based on a shared spoken Telugu (Mitchell 2009) [1]. Yet, over the years, those from the Telangana region felt discriminated against. As Srinivasulu (2002) describes how Telanganas aired "grievances of discrimination and injustice felt by these sections vis-à-vis the employers from the developed region of coastal Andhra" (10). The establishment of the state of Telangana comes after a decades long struggle for the Telangana ethnic and regional group to get their fair share of resources – including seats in the good colleges and government posts. Complaints that Andhras ran the businesses, institutes of education, and politics were central to the call for separation. And Hyderabad's Muslim community– being predominately based in what is now Telangana – identified with this pull away from Andhra dominance – though there affiliation was a bit more complicated, which I will speak to later in this chapter. This agricultural background that enabled the sale of lands to reinvest in the city of Hyderabad is also intimately tied to the history of the privatization of higher education in Hyderabad.

[11] For an in-depth history on the creation of Andhra Pradesh as a linguistic state based on the Telugu language please see Lisa Mitchell's *Language, Emotion & Politics in South India: The Making of a Mother Tongue*, 2009. Indiana University Press: Bloomington.

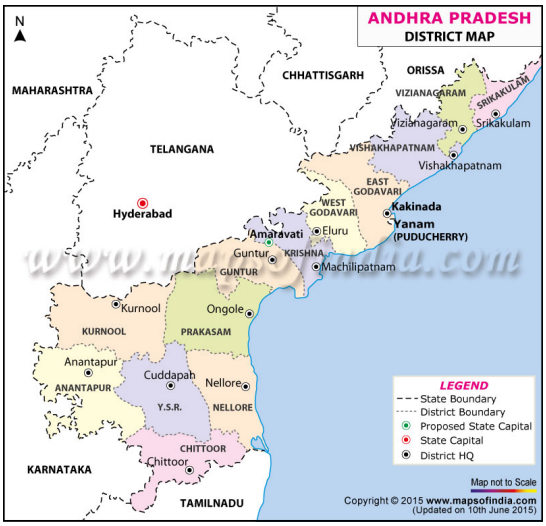


Figure 2.10 Map of new state of Telangana

This is the very broad historical situation in which my research took place. Now, I will turn to two historical processes happening in Hyderabad in the post-Independence era leading up to the 21st century: the creation of the IT industry in Hyderabad and the privatization of higher education.

Hyderabad to Cyberabad

Popular narrative identifies the arrival of IT to Hyderabad with the creation of Cyber Tower and Hi-Tech City in the mid-1990s. However, there are longer histories that go back to the 1970s. Starting in the late 1970s and 1980s, many entrepreneurs were working out of their homes or flats with cheap rent along the diagonal from Panjagutta to Paradise Crossroads. Farhan, a successful tech entrepreneur, recalls this geographic stretch in Hyderabad as nicknamed the "IT Golden Mile". The companies started during this time were qualitatively different than the larger ones that would come to dominate the city of Hyderabad a few decades later. Many of the companies were working on local translation and typing, such as Farhan's

which created the first word processing program to type in Urdu; he also remembers another team working on local maps in Telugu. Ja, when talking about this time, narrates Hyderabad as a city focused only on smaller audiences (he notes that they merely focused on domestic opportunities, rather than international ones) and claims that the IT industry really began with the government moved into the Maitrivanam building. Others remember this time with nostalgia, and wonder a different city Hyderabad would be today had the local, indigenous technology companies been given the opportunity to thrive.

After working with the government to set up IT infrastructure in Bangalore, Ja decided that, as a Hyderabadi, he wanted Hyderabad to be the next big IT city. At the time, the early 1990s, CM Naidu was chief minister of the state. The dominant narrative attributes much of the IT industry's success to Naidu. Ja explains that prior to Naidu, the state's leaders had little interest in expanding the IT infrastructure and policies. CM Naidu allowed Ja to lead a team to start STPI (Software Technology Park of India), a form of SEZ, office in the Maitrivanam building in Ameerpet. At the time, Maitrivanam was a government-owned building that had been empty for some number of years. Located in Ameerpet, in the early 1990s it was by no means in the center of the city, but they had a feeling the city would grow out, and it was close to the neighborhoods that were the center of the city at the time, such as Abids and Koti.

Ja belongs to the Kamma caste and hails from coastal Andhra. As I have previously explained, at the period post-Independence coastal Andhras made inroads to the politics and business in the city of Hyderabad, and Ja's push to return to Hyderabad and set up infrastructure for IT in the city is evidence of the intertwining of post-Independence Andhra stronghold in Hyderabad. Chief Minister Naidu was also Kamma: the ease of doing business with each other to build the IT infrastructure in Hyderabad should be read as something that was facilitated by caste

affinity and familiarity. This demonstrates how social power manifests in the development of the city.[2]

Casteing Power

My approach to caste in this dissertation is to recognize it as a social category, that is a thing that gains meaning through social relations and communicates power within this web of relationships. In Singh's (2015) work on Sahariyas, he describes what it means that caste is social. First of all, he points out that academic work promulgates the idea of caste in Hinduism the four categories of *brahmin* (priests), *kshatriya* (warriors), *vaishya* (traders), and *shudra*, or laborer. This is the way caste is also taught in American school text-books with an accompanying pyramid picture meant to represent both hierarchy and numbers. As Singh (2015) explains, he never once heard his interlocutors speak of *varna*—I similarly never heard any speak of *varna* or the four categories. This framework of understanding caste is an overly simplistic way of explaining how it operates in everyday life in India.

Based on central government reservations alone there are more than 100 *jatis,* or sub-castes. One aspect of sub-castes is that they are regionally based, which means that they carry more meaning and power in the region where they are predominant. In my research, caste was most often mentioned in relationship to the two regional forward castes that held power—the Kammas and the Reddys—and in relationship to whether or not a student's caste enabled them to receive government scholarship for education.

[2] In 2014 CM Naidu was elected as the first chief minister of the new state of Andhra Pradesh. Ja Chowdary, in 2015, was elected to be IT consultant for his government. During the period I conducted this research—from 2014-2016—there was debate among Hyderabadis about whether the Andhras were going to take all the business out of Hyderabad and move it to the Andhra coast. Part of this reflected a strong narrative of Naidu's ability to build an IT-centric city.

Deshpande (2010) outlines four things that caste comes to mean socially. Two of these meanings are salient to this dissertation. The first is using caste to stand in for 'lower-caste'. Deshpande (2010) explains this is "about the concerns and problems of the lower caste, including especially reservations, quotas, and vote banks" (40). Most students, when I asked them about university scholarships, simply replied that yes, they received government scholarships. They would say 'based on my caste', signaling their SC or OBC status. The reservations also look at familial income, recognizing the overlapping but not exactly equal categories of class and caste. There were many students who did not quality for government reservations based on caste, but were low-income and qualified for other forms of scholarships.

For example, Naresh, a student who was at the same time as the computer-training course finishing his first year of university, I asked if he received any scholarship. Naresh replied that "No, I am OC madam", referring to Other Classified, or a group of castes that has no formal reservations. I followed up and asked Naresh why that meant he didn't receive scholarship. He replied:

> OC means Other Caste – there are no government relations. For OC caste you have to pay the fee. But I get help from my caste organization. You tell them the fee and they don't pay you back the entire fee, but they will cover like 1,000, 2,000, maybe even 2,500 rupees.

Another student, Rajesh, elaborated on the status of Other Caste, and how he felt as a low-income student from a non-reservation caste.

> So because of that reservation system in my IIT entrance exam, for merit students, meaning our caste, we need to get 190 out of 360 marks, but lower caste—like SC and ST—they can get 60 or 70 on the same exam and get a seat. This means that if they get only 50 marks they can get in, but if we get 180 marks we can't get in.

In our conversation, Rajesh seems frustrated that there are government reservations for caste but not necessarily for class, pointing towards how the two categories are often intertwined. Caste

and class are distinct social categories to analyze but often coalesce. As Deshpande (2010) says, the only ones who have the ability to not know clearly to what caste he or she belongs is the "upper caste urban elite" (40). This is because they have accrued enough wealth to be able to say that caste 'doesn't matter' – following arguments of the universal Indian citizen devoid of caste. This is a privileged position to be in, and not one that many hold.

The second meaning Deshpande (2010) outlines is a "web of distributional relations" which "determine the distribution of power, privilege, and material resources in conjunction with class" (40). This aligns with the other way that caste was often centrally located in the conversations I had with interlocutors. Caste – specifically Kamma and Reddy castes – were often invoked as the 'ones who held power' in post-Independent Hyderabad, and my interlocutors saw this as directly feeding into access to new technologies, jobs in IT, and political appointments at the state level. The two politically dominant castes in the region, the Reddys and the Kammas respectively make up 6.5% and 4.8% of the community in region of Telangana and Andhra states (Srinivasulu 2002). The Reddys are regionally affiliated with Rayalseema and Telangana, while the Kammas with the Andhra region on the coast. It is, in part, a history of how these castes gained, mobilized, and maintained power that I track through this chapter.

The social and material power of these castes colored images of their larger regional ethnic groups. During my research, I often heard stereotypes of these different ethnic groups and communities. Upon telling an IT professional in Bangalore that I did work on computer-training, he responded: "There are so many IT people in Hyderabad because the Andhras are a hard-working people. They get up at five am to till the fields. In Telangana, people wait until 10am. And Hyderabad's Muslims are leisure-loving – they'll be up all night for *mushaira*, so they don't wake early to work." This saying elides other explanations beyond genetic personality

dispositions, such as the post-Independence transfer or land. Biao (2006) says that what was remarkable about the IT professionals coming out of Hyderabad is that 70% hailed from coastal Andhra and 80% of these from four small districts (Biao 2006: 33). Azam, a previous IT professional turned social activist, explained to me how this came about:

> In part this happened because of the agriculture situation during the Nizam's Hyderabad. The Andhra region had tons of water and was well connected, due to the canal system that the Nizam built and the water supply. Also, Andhras benefited from the Telangana region. If you look at the crop patterns, in Telangana you need to toil a lot more to reap a lesser amount of produce – there are no dams in Telangana. In Telangana you can buy an acre for 20-50,000 but in AP it's 1 crore. And then there's the difference is whether you have continual water supply, in AP there is a 365 days water supply. Telangana kept silent and didn't really push when a lot of policies were implemented [around water] in the 1950s and 1960s.

Biao (2004) traces how this money from the water-flush Andhra part of the state was funneled into the creation of the private colleges—80% of all capital invested into private colleges in the state came from coastal Andhra agricultural surplus (33).

Upadhya (1988) identifies a number of events, including the building of an irrigation system and the phasing out of the *zamindars*, or land owners in coastal Andhra, as precedent for how this class of Kamma 'farmer-capitalists' emerged as an economic powerhouse in Hyderabad. Prior to the British installing the irrigation system in the late 19th century the Andhra coastal region was not a fertile agricultural place and was frequently subject to droughts; after the irrigation canals it became an ideal place for rice cultivation (Upadhya 1988: 1377). "Because the Kammas are the most populous cultivating and landowning caste in the region, it was mainly Kammas who constituted this new "rich peasant" class" (Upadhya 1988: 1377). Upadhya also traces how once most of the land was purchased on coastal Andhra, Kammas needed to re-invest agricultural and land-owning surpluses, which facilitated a flow of capital towards the city, Hyderabad (Upadhya 1988). Though few of my student interlocutors had roots

in coastal Andhra Pradesh, the head of one of the institutes did, as did other businessmen I met in the city. Most of the families from this region I interacted with still had land in the region, cultivated some and left someone to care for the land.

Building Ameerpet

Once the Maitrivanam building was set up as an STPI, it became a government-sponsored incubator where companies were invited to come reside in the building and receive 'mentoring'. When I asked Ja what types of mentoring companies who moved into Maitrivanam received, he says the most important type was that of how to navigate government bureaucracy. He explains that they were able to get 'single window mechanisms' working – where in one window of time sitting down with politicians a company could get all of the documents and paperwork done to set up office in Hyderabad.

> We used to do a lot of mentoring to them. For example somebody has got some problem with customs and civil exercise, though it's not the problem of STPI, I used to go and mentor them and talk to the customs officials and sort out that problem. Like that we used to mentor and we used to give the much-needed assistance to them for them to survive introducing….That attitude [of] the government going to the industry to their doorsteps and giving all the incentives and also, working along with them to see that they are successful. That model really was very, very useful. That's how the Maitrivanam became the first successful incubator in the country.

Once again, it is clear here how social power in the city translated into paving the way for IT companies, and how the setting up of IT in Hyderabad became part and parcel to the post-Independent Andhra state's identity. This 'mentoring' demonstrates how social power is translated into state-wide policies that allowed for the proliferation of real-estate sales, etc.

After STPI set up in Maitrivanam, training institutes starting popping up in buildings around Maitrivanam to support companies incubating in STPI. Most started in Aditya Enclave,

the same building that I did my research at in Ameerpet; today it is still bustling to the brim filled with technical training institutes. The building, prior to this boom, was a residential apartment building. Today, while at the institutes, you can tell which rooms were the bedrooms, living rooms, and kitchens. Following this, Ja mentions that real estate developers began building more buildings along the strip, assuming they could get high rent payments from IT companies. The IT training industry began to expand around Maitrivanam as a support industry. The companies began to need particular tech skills, and the training institutes grew to support those needs. The needs became siloed, particular skill sets needed at a particular moment, For example, he explains how at the beginning some companies needed SMP skills and others needed people with IBM mainframe skills.

Ameerpet as a training center of the city grew exponentially during a few booms, the first of which was the Y2K scare, when the changing of the year from 1999 to 2000 ran the world into a panic that the computers' calendars were only set to the year 2000 and would stop working the minute they turned to 2000. At this moment companies all over the world needed people trained in particular skills and there was a dearth, Ameerpet training centers boomed and trained people to both work on computers in India as well as help secure H1 visas to the US through bodyshopping shops (Biao 2006). As Ja recounted this time, he says that it exemplified a time when people "took advantage of being entrepreneurial, how can you say—it's the genetic formula of many Andhra, Telangana people, Telugu people".

In reminiscing on setting up Hyderabad as an IT city, he says that at first he was very concerned that Hyderabad didn't have the "social infrastructure" to support an IT hub. I asked him what he meant by "social infrastructure", and he explained that by that term he meant "good international schools, international airports, a lot of flights, and good institutions of higher

education". When I started working in Hyderabad in 2006, I flew to Delhi and took a train from there; there still was no international airport. Hyderabad unveiled its international airport only in 2008. Flash forward to 2015, the Indian PM Narendra Modi unveiled a direct flight from San Francisco International Airport (Silicon Valley) and Hyderabad during his visit to Silicon Valley. To refer to these material infrastructures that serve and benefit the wealthy, business-associated individuals in Hyderabad as 'social infrastructure' shows that his idea of IT for development (and as the government has demonstrated) is rooted in some way in a trickle-down theory, where people believe that if you focus on simulating economic growth from the top, economic benefits will eventually trickle down to all sectors of society. However, as the following chapters demonstrate my interlocutors have seen few of the benefits.

In 2016, the new Telangana government has launched itself into proving that it can continue to grow Hyderabad as an IT city, even with CM Naidu leading the new state of Andhra Pradesh. In 2016 the government launched a incubator in 2016 called 'T-Hub'. Located in the new part of the city, T-Hub invites startups from across the country to apply to incubate – sounding similar to the setting up of Maitrivanam in the early 1990s. While the government continues to poor money into attracting IT companies to Hyderabad, the stories that my interlocutors tell in the following chapters show a different side of IT: one where the jobs take place not in fancy incubators but in the everyday offices of the city in pharmacies, retail stores, and colleges. While the story of Maitrivanam and the Cyber Towers are part of Hyderabad's IT history, I think its future will tell a different story. At the same time as the IT industry arrived to Hyderabad, its higher education landscape shifted. This story is also one of communities flexing social power in the city, and influenced the educational landscape that my interlocutors found themselves in in contemporary Hyderabad.

A Hospital and a College

At the beginning of my time doing research in Hyderabad, India, I went to meet with the head of Excel College[2]. Day after day, she told me that she was busy and asked if I could return the following day. Daily I returned, sat, and waited while a steady stream of people stood in line to speak with her or have her put her signature on a page. After about a week of this, she changed her tune and asked me to return the following month, explaining that it was a very busy time of the year. She continued to explain that it was accreditation season and that their college was being evaluated the following week to see if they would maintain their status as an accredited college.

I didn't think much of it at the time and agreed to return the following month. A few weeks later I noticed, while reading the morning newspaper, that over 100 private colleges lost their accreditation during this season in 2015. Excel College is a private, minority-based college in the city – meaning that its mission statement is to provide education to students from a minority group—in this case Muslim—and that a large percentage of the college's seats are reserved for students from that group. Colleges were shuttered because of lack of infrastructure, resources, and teaching personal – among other things. The city's private minority institutions felt as though they were hit harder than others, including Excel College.

While my larger research centers not on colleges but rather on computer-training centers, the history of the privatization of colleges in Hyderabad city is crucial in understanding the emergence and prominence of these basic training institutes, as well as the ways in which class, religion, and gender shape higher education and the attendant job market. Many of the students I

met in these training centers were at the same time pursuing their college degree or had recently graduated.

My experience at Excel College led me to talk to people about the history of the privatization of colleges in the city. While a college degree is more affordable now than ever – due in large part to government scholarships, especially for lower-caste and minority students, I also came away with a sense that there is an over proliferation of private colleges, and subsequently the college 'degree' has been diluted. As one professor I was discussing this with said: "In the 1990s, if you received a college degree you would make more money than the previous generation and have a guaranteed job. Now, that is not the case". This hits hard for first generation college-going families who – with the help of government reservation seats and scholarships – are able to afford a college degree, though the out of pocket cost is still steep.

One argument I set forth is that part of what led to this over-proliferation of colleges and subsequent dilution of a college degree is the establishment of private, community-based colleges with start-up funds from wealthy entrepreneurs and philanthropists. More than once, I was introduced to philanthropists in the city who had started both a hospital and a college. This at first shocked me, as the bureaucratic hurdles to start either institution in the United States is a feat. Yet, over time, I understood that regulations changed in the 1980s made it pretty simple to open a college, and that it became a standard part of a politician or philanthropists resume to have opened an educational institution to signify his or her commitment to the community and education as a vehicle for social mobility. I further argue that these private community-based colleges continue historical patterns of stratification, rather than disrupting them. In order to tell this narrative I will first give a brief history of the city of Hyderabad, then talk about the

emergence of private colleges in the state of Andhra Pradesh, and last speak to the history of minority-based private colleges in Hyderabad.

Hyderabad's reputation as an education city is not one of failing colleges: the city has gained a global reputation for churning out highly skilled computer talent. In 2014, Hyderabad topped the global list of cities which were granted F-1 visas to America for higher education—many of these students stay on in America and work in the lucrative tech industry. Amrute (2016), in her work on Indian IT workers in Berlin, notes that the majority of her interlocutors hailed from the state of Andhra Pradesh. This, however, is not representative of the wider state or city demographics.

Scholars of education in India have traced the contours of India's turn to privatized education and found that in this system those with financial resources are, likewise, the biggest beneficiaries (Subramanian 2015; Srivastava and Walford 2007). Most of the minority colleges in Hyderabad are Muslim affiliated, with a few Christian ones. During the first few decades of Independence, colleges were primarily run through the government. In the 1970s, in response to a high demand for and dearth of technical experts, legislation in Andhra Pradesh allowed for the establishment of private colleges. The most common form became known as 'donation engineering colleges' (Kamat et. al 2004: 10). These were private colleges where you could get around a competitive entrance exam by paying a 'donation' (Kamat et. al 2004). The density of technical colleges began to pick up speed throughout the 1980s and into the 1990s:

> Between 1995 and 2000, seventy-five private engineering colleges were set up in Andhra Pradesh – compared to twenty-six (government and private) over the sixty years from 1929 to 1989 (SCHE 2001a), and eight between 1990 and 1995 (SCHE 2001b and 2001c) –almost all delivering IT education (Biao 2006: 28).

As I was discussing this history with a professor in Hyderabad, she told me that in the mid 1990s people started poking fun at the number of colleges that had popped up, using the following Telugu phrase: "*Chettuki, putta ki engineering college*" meaning "At every tree and pothole, you will find an engineering college".

Up through the 1980s, the Reddys – a regional forward caste – held dominance in politics, business, and education in Andhra Pradesh. This began to shift in the 1980s when NTR became the first non-Reddy elected as Chief Minister. He came from what was described to me as a 'rival' caste, Kamma, and part of his campaign was on how the Reddy consolidation of power in the state mimicked the colonial pattern of elite education of primarily high caste students (Kamat et. al 2004). The Kamma caste was non-Brahmin agricultural caste, but as I previously mentioned, parts of the community were rooted in the fertile agricultural lands on coastal Andhra. The Kammas were also known to cultivate the drier inland area without easy access to water. What followed is that many institutions emerged that allowed for some upward mobility in the IT industry by middle-castes—many of the most well-known engineering colleges in Hyderabad today are caste-based (such as CBIT and Vasavi).[3] Importantly, Kamat et. al (2004) points out that: "almost all were formed under the patronage of caste-based trusts that then spun off Educational Societies that came to dominate the techno-managerial education sector in the 1980s" (Kamat et. al 2004: 10). This pattern of community-based financial injection into private colleges is a large part of what produced the private college landscape today. While there was nuance between the Reddys and Kammas, they are both powerful forward castes that hail from the coastal region of Andhra Pradesh and originated as agricultural cultivators.

Kamat (2004) and Biao's (2006) narratives leave out the discussion of another large minority group in the city of Hyderabad, the Muslim community. This last section is put together

from oral histories I conducted on the emergence of the private minority colleges. Azam explains what the city felt like to many Muslims in the 1980s.

> In the 1980s there were hardly any Muslims in good jobs – the government/IT/etc was almost 95% Andhra. Wherein in Tamil or Kerala region matters first, region has been a tenuous affiliation here in Hyderabad with the Nizam, and then the two rival regions of Telangana and Andhra Pradesh. Hyderabad previous to independence had strong affiliations with Iran and Saudi in particular (and now the places that people still really want to go and know people in are Dubai and Qatar) and many Muslims from the city started traveling there to take jobs because Muslims could not find jobs nor education in the city of Hyderabad.

He explains that change for the Muslim community and education also began with the coming of NTR into politics. He challenged and swept the elections in 1984. NTR had convinced four members of the (Majlis-i-Ittehadal Muslimeen) MIM party – Hyderabad's Muslim political party - to support him in his campaign for Chief Minister to garner votes from the Muslim block. In exchange, Vizarat Rasul Khan asked for the permission to create the first minority college: the Deccan Medical and Engineering College.

NTR agreed, and after the election Khan put up his own personal money to build the college. Over the course of his career he went on to set up 56 different minority-based higher educational institutions. This college was the first "minority college" in the state and set a pattern for private community-based trusts to fund minority-based institutions. The Deccan College website today states that the college was established "by a Muslim Minority Trust – i.e., the Dar-Us-Salam Educational Trust which constituted to promote education and welfare of weaker sections of Muslims" (Welcome to Deccan College of Sciences 2017).

Azam explained to me that what was important about this political exchange was that "everyone knew that he [Vizarat Khan] was actually the one running the place [while the MIM tried to take the credit]". He continued to explain that at that point the Owaisis, the face of the MIM party, resented that they were not getting credit and that the masses "started to idolize the

guy who started this more than the Owaisis". In Azam's mind, the success that the creation of the college had on the Muslim community kicked off a competition for philanthropists and politicians to start an educational fund and open a series of schools. The Owaisis have since started many schools and colleges. After this, the Owaisis – who were picking up political momentum at the time – got involved with the college and many other people wanted to join in and start colleges, particularly those with political aspirations. The MIM today remains extremely powerful, with the Owaisis at the helm. Azam then chuckled and remembered some of the Owaisis attempts – prior to the pattern of individuals and trusts funding the colleges - to collect donations door-to-door from constituents to open schools in the years prior: "Oh! remember that in the 70s when they started they sent people around neighborhood to go door-to-door collecting goods. Many people made fun of them because of this activity. Saying, this is not how you start a college!"

Colleges Run Amock

In a recent Scroll.in article on the crisis of private colleges – including many minority colleges – shutting their doors in Andhra Pradesh and Telangana, the Hyderabadi educationist MAK Menon asks: "What else can happen when education has become big business? Anybody with 5,000 square feet of space in the city floats a school during the day, a college by evening and a training institute by night" (Radhakrishna 2016). While the setting up of caste- and minority-based colleges and attendant government scholarship schemes has ensured more students hold college degrees, the question of exactly who benefits from the establishment and running of these private colleges – I would argue – warrants more attention.

Conclusion

In this chapter I outlined the larger history and space that my research took place. This chapter answers two early fieldwork conundrums: how do I tell a story of basic computer training in an expansive city where centers exist in every neighborhood? And why were students who had computer science degrees in a basic computer training class? I introduced my two neighborhood sites and how they relate to each other within the city of Hyderabad. I also detailed the educational landscape from which computer-training centers emerged. A large part of this story is how Andhras consolidated social power post-Independence, and its effects on the educational and labor landscape.

When I began my research, I asked many interlocutors to explain the difference between Andhra and Telangana. All my interlocutors tell me whether they were Andhra or Telangana, but they could not explain the difference very well, besides referring to the geographic region or a dialectic difference in language. On top of this, I had heard the stereotypes about Andhras being hardworking a number of times. It seemed—and I found it to be—a trope that is iterative in that it reinforces ideas about merit and success for the community in power in the region. My interlocutors responses and the prevalence of the stereotypes pushed me to learn more – more stories and explanations emerge as the dissertation unfolds.

In the next chapter, I turn away from a large-frame lens to investigate what happens inside the institutes. I outline a number of different literacies, outside of the purview of computer skills, that students learn while completing their certificates.

CHAPTER THREE

Beyond Basic: Multiple literacies at computer-training centers

One day a student, Farha, and I went to get chai and a snack after class at one of the computer-training centers while she waited for her husband to pick her up. As we're waiting for our chai, she pulls out her notebook to showed me her strategy for taking notes in the computer class. At the beginning of her notebook, she had copied—word for word—one of the paper manuals detailing Microsoft Word. She showed me the pages, pointing to each column and explaining what it meant: "Windows. Win plus E equals My Computer. *Is ka matlab keh win aur E dono dabao, phir My Computer (shows) [this means that you press both Win key and E key, and then My Computer will appear".* She next showed me the details of the main Windows menu, including the different tab bars and options in the menu across the top of the screen in Microsoft Word. Following these pages, she had examples of what files looked like, such as the one below showing how you might create a table with student details in a Microsoft Word file.

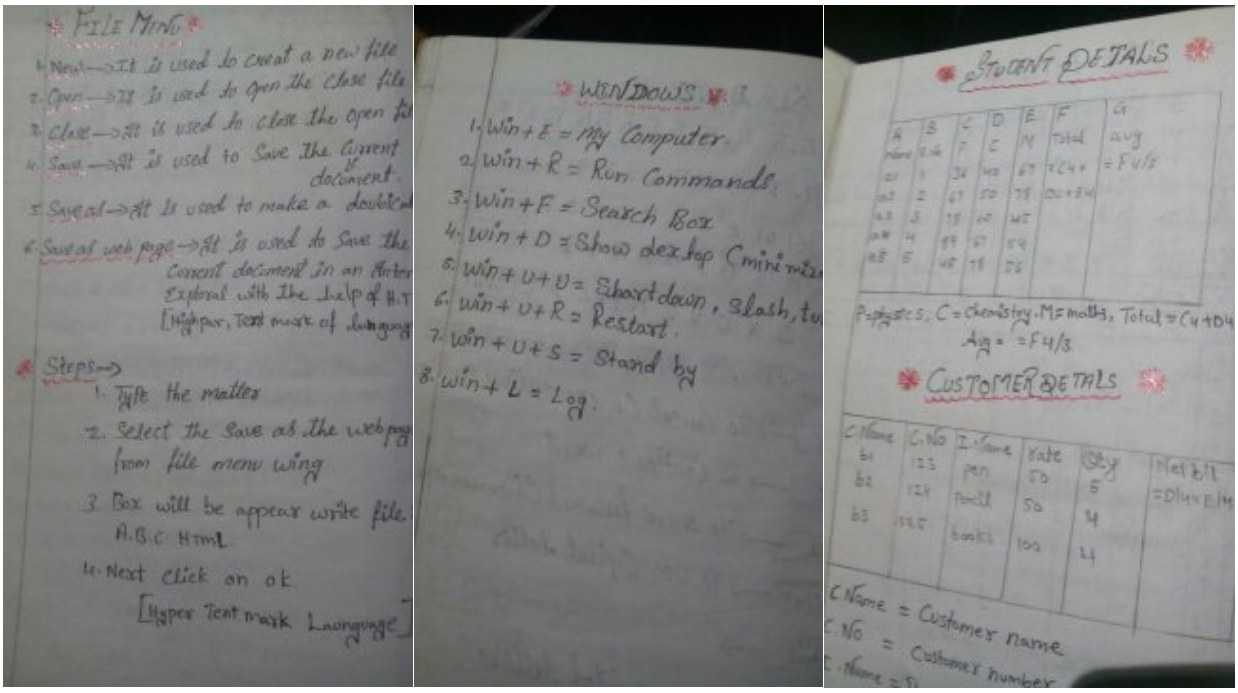


Figure 3.1 Student's notebook with Microsoft Word examples

While not all students reproduced the entire Microsoft Word menus, her notebook was emblematic of students' practice of taking precise notes in the computer training centers. In part, the preciseness reflected the fact that most students didn't have a computer at home and instead relied on a detailed reproduction of the software menus or computer keyboard to practice. They either copied these directly off the Microsoft Word or Excel menu or copied them out of one of the many Microsoft Office manuals sold at bookstores and stationary shops across Hyderabad. Farha's act of copying down the MS Word commands line-by-line in this notebook encapsulates one aspect of the experience at the computer centers, that of rote learning and repetition.

In copying the Microsoft Word menu in a notebook, embellished with colors, sparkles, and decorative flourishes, Farha also removes the software from its confines in the computer screen. In embellishing her Micorosft Word menu, Farha enhances and lays claim to the software. Making it pretty makes it hers, and this labor of making Microsoft Word hers not only paves the way for her to imagine different futures but also remakes her reality in the present. And, importantly, it draws attention to the playfulness and joy that entail this laboring. Farha's notebook also demonstrates how students are interpolated into IT and makes material the everyday labor of aspiring: her notebook, meticulously copied and embellished with different colored pens, and sparkly ink, was a prized possession she carried with her in her purse as she traversed the city. It illustrates the labor put into imagining a future with computers, the ability to navigate computers and apply this mental and technical knowledge in a job.

For Farha, computer education was as much about imagining a future with a computer as it was about escaping a present reality of boredom and patriarchy. Farha was pulled out of school before 10th standard as her father thought it was a waste of money. She described sitting at home and watching her friends walking to and from school: "Sitting at home, where will it get me? If I

study then in the future a job will come". She couldn't study at first though, her family sent to Dubai to help her sister and her husband with domestic duties. After a few years, she asked to come back to Hyderabad. Upon her return she was married to a man 15 years her senior and began domestic duties of cleaning and cooking for her husband and her mother-in-law. Her home life depressed her, especially after she learned of her husband's longtime lover and gave up trying to have a romantic relationship with him. One day, she was lamenting to a friend about how she was so old and she would never have a chance to get educated now, when her friend responded: "education doesn't have to do with age, go to the open university on Sundays!" From that Sunday she went weekly until she passed an exam to complete her 10th standard certificate. After she completed, she found the advertisement for SMART Centre. She told me: "I want to learn the computer system and get a job. Then I won't be dependent on anyone: mom or dad, husband, or sister". She convinced her husband to go out of boredom, and he viewed it as a fun activity she could attend (though he dropped her off and picked her up to ensure she went nowhere else), but it served a much larger purpose for her: that of giving her life. As Farha sat me down and is showing me the notebook, she tells me that she wants to tell me a dream of hers, one that she had many years ago but still sticks with her today. She tells me:

> This happened when I was 16 or 17 years old. I was in a room. The room had a door and one window. I fell asleep. When I woke up a boy was calling outside the window. I went and looked out the window. The boy was outside. Then he came up to the window. I said I wanted to go far, far away. He said, ok. I will take you. I asked how will we go? We have no airplane, no car, how will we go? And he just took me hand. We started flying. We went up and were surrounded by big, big stars. Beyond the stars we saw moon, *chandni*. There was *chandni* (at this point she points in the restaurant to a place where a light is reflecting off of the wall) like that, she says, the moonlight was reflecting. We flew and flew and flew, the wind was fast (*tez hawa*). At some point we flew over big green fields and trees. On the ground snow was falling. There were very clean busses that all had AC. We went to a restaurant and ate. To this day I can see that boys face so clearly. It's so clear I think often that it happened. Anyways, I am telling you this so that you can understand a bit about me. I always wanted to go and travel and still do.

This notebook, and her copied notes of the Microsoft Word sheet, is material proof of her class, and it is in her education that she finds both joy and promise for the future. She holds close her dreams of working, of traveling, of love. The glittery pens and different colored sections make her notes—and these desires— more official, similar to the act of putting a stamp on official certificates, which I will discuss later in this chapter. It also points to her not having a 'system' (computer) at home that she can practice on. Instead, she can practice by opening her notebook and mentally walking through the movements.

Overview

In this chapter I look at students' daily work towards digital literacy at the computer centers. There has been a big push for digital literacy for development from both outside and within India, but exactly what digital literacy means in underdetermined. In this chapter I look at all the different types of literacy that comprise a digitally literate subject. Becoming literate in various things – using a computer mouse, knowing how to navigate a smart phone, typing at a certain word-speed per minute, or understanding the English commands in Microsoft Office – are all part of producing oneself as a modern subject. Understanding these all as pieces of a striving for literacy helped me to understand: why do these students sit around and copy the Microsoft Word documents verbatim? While this chapter centers on educational spaces, I am not interested in evaluating whether or not the classes are effective. While there is a place for looking at effectiveness, I contend that narrowly looking at job placement outcomes and final test scores illustrates only a sliver of the labor of aspiring that takes place at the centers. It also limits an analysis to discuss effectiveness in one linear trajectory (does one get a job?), while this ignores whether the classes are effective for helping students imagine alternate futures or find joy

and camaraderie in everyday life. In addressing these multiple literacies, this chapter broadly addresses two questions: 1) how do computer-training centers orient bodies in particular ways? 2) what is the promise that this certification holds, and how does a piece of paper become imbued with the power to communicate this literacy?

This chapter views literacy pedagogies and classroom experiences as necessarily embodied, following scholars who push against it being primarily a cognitive skill (Enriquez et al. 2015). Computer centers as cultural spaces of their own; sites where subjectivities are performed and produced. Students' bodies are marked in certain ways that their peers can read—gender, class, caste, and religion—and the ways these bodies are marked as different, or performed, is woven into learning how to type or send an email. This scholarship builds off of early scholarship on embodiment and literacy that views classroom pedagogy, and thus literacy centers, as places that disciplined the body (Luke 1992). In this chapter I look at how the pedagogical structure of the classrooms—the rote—imagines a computer education devoid of embodiment. However, I also show how students' work against an abstraction of their body and make the technologies and the space of the institutes their own. These embodied interactions in the centers are the labor of aspiring.

The second aspect of aspiration I draw attention to in this chapter is that of the materiality of documents and how collecting and keeping safe of these documents is a critical part of preparing for the future. This line of inquiry builds on the work of scholars who analyze the materiality of documents in relation to broader social relations (Latour 2005; Hull 2012) to argue that this materiality both tells us something about the educational institutes' place within a larger culture of bureaucracy in South Asia as well as how these students are being prepared for the job market. In following Hull's (2012) contention of a graphic artifact as something that garners its

symbolic meaning from its social circulation, I analyze how the computer-training certificates accumulated value.

The Rote

The cool of winter past and the heat was beginning to arrive, a few months before the heart of summer hits Hyderabad in April and May. The windows from the computer room have bars over them, and two fans whirled above, clicking at every turn. Watermelon was now the seasonal fruit sold on carts dotting every street, the thick, juicy slices taking the edge off the encroaching heat. Zainab, the instructor, was wearing a beaded loose purple kurta, the fashionable *palazzo salwars* that billow outward, and black heels. Her headscarf matched the beading of her kurta. These clothes served as a marker of class that separated her from the students in the class. Unlike Sarkar's (2016) computer students in Delhi, few of the Muslim students at the institute had names that clearly gave them away as higher caste. However, Zainab's last name was Syed, which signaled that her family descended directly from the Prophet Muhammad. It also pointed to the fact that at some historical point the family originally came from outside India, an association she clung to having spent part of her childhood in Saudi Arabia and as at the time she was dating a Hyderabadi man who was worked and lived in Saudi Arabia. At the front of the classroom, Zainab displayed higher education, a sense of high-fashion with specific influences from abroad, and more financial stability than many of the Muslim students in her classes.

She started off by going over the main topic of the day on a large screen at the front of the room: that day's topic was how to format pictures in Microsoft Word. The students, who

were all sitting at computers around the room, are turned away from the computers and towards the large screen at the front of the room. The woman sitting to the right of me was wearing a *salwar kameez* with blue and khaki swirls embossed on the *kurta,* or long tunic, and the one to the left a woman was wearing a purple *kurta* embroidered with a mango design in green and red. Her hair was pulled back taut, wrapped in a checkered cloth. She wears a red *bindi* on her forehead and a silver nose ring. The construction of the building across the lane added to the cacophony of the fans. Beyond the computer screen I looked down on a concrete, turquoise-painted home.

The main thing the class will learn today, Zainab said, is how to change the size of the picture as well as the border of the picture. After we have demonstrated that skill we will turn to learning how to use various effects on pictures. After about fifteen to twenty minutes of lecture, she turned and asked students to get their computers ready for a practice exercise. She asked everyone to open a new Word document and insert a picture—either from the Microsoft Word depository or a file they found online. Some students had missed classes and didn't remember how to open a Word document; other students quietly helped them.

Many pages of my field notes contain the same sorts of class notes that the students were taking—a copying of the lecture given at the front of the room. Below is an example of one class day's notes in my notebook. On this day we were going over all the elements of the dropdown "Table" menu in Microsoft Word.

-Formats, colon, shading → apply color
-borders
-select total table
-Select any color, select all borders
-Select any border style
-Color of the border
-All borders

-Design→Draw Table→Eraser→erase the lines
-Repeat Header Rows→same headings next page
-Insert hyperlink to document
-Insert Bookmark
-Bookmark means
-Add Bookmark
-Go again to bookmark, MS office → doubleclick
-Select any heading style: pick the date, document title
-Remove header, remove footer
-Page number (in header)
-----Remove page #s
-Number format
-Insert date and time: select any format and then press "OK"
-Object – this does nothing but import the pages' object
-Bitmap Image → you can draw item, will update in word document
-Or you can draw by going "Office→ Update document→Insert txt. File → Click on txt. From fil"

Rote geneaologies

This style of pedagogy—students sitting and listening to a teacher at the front, while taking detailed notes, and then having time to practice doing the particular task is often referred to as rote, referring to a mechanical repetition. Case studies of government schools in India show that most teachers follow a rote—listen, repeat, and regurgitate—form of education. The way that the education system is structured, with class tests leading up to notorious standardized tests for entrance into university studies in particular subjects, as well as the government exams for careers such as chartered accountant, the civil service exam, or bank exams (Clarke 2003; Nussbaum 2006). Given this, for my interlocutors, this practice of quietly listening, memorization, and regurgitation was a pattern for education that they expected. Beyond schooling, the tests for entrance into public service (such as the banking test or the civil service exam) are notoriously arduous, time-consuming, and based solely on the memorization of large study guides (Gupta 2017). Computer training centers offer students a shorter, quicker, and more widely-available path to a potential career in urban India.

Anthropologists of education have long looked at schooling, and in particular rote-learning pedagogies, as a structure for disciplining students to accommodate the needs of the state (Benei 2008; Seth 2007). Some scholars of India have identified rote-learning, as a lingering influence from British colonial education policy, with a direct aim to discipline the locals (Cohn 1996). "The British conceived of education as taking place in institutions, meaning buildings with physically divided spaces marking off one class of students from another, as well as teachers from students…the student's progress had to be regularly examined to measure their acquisition of fixed bodies of knowledge" (Cohn 1996: 48). One of India's most renowned authors and progressive anti-colonialist, Tagore, argued that the British employed this style of learning to employ Indians to their colonial ends (Tagore 1961). He was an ardent opponent to rote learning, which he most clearly articulated in a satirical piece "Parrot's Training" – a story about a parrot following its owner's instructions with mindless discipline; this story is widely viewed as a caricature of colonial education in the early 20th century in India.

However, this critical view of the rote elides other forms of education familiar to my interlocutors, such as Qu'aranic studies. Moore (2006) compares rote learning in Islamic schools and public schools in Cameroon, showing that while the form and structure of education was very similar, the rote learning was understood in different ways. For my Muslim interlocutors, achieving the status of a Hafiz, or one who has memorized the Qu'aran, was revered in the communities I worked in. Many of my Muslim interlocutors sent their children to Islamic study schools in hopes that they too might one day achieve the status of Hafiz, or guardian of the faith; according to Islamic belief, fully formed people can recite the Qua'ran Other scholars of education in South Asia have pushed back on the idea that the rote comes solely from a colonial legacy; Nussbaum (2006) argues that memorization in education can serve an important role,

such as giving students a solid background upon which to build political arguments while debating history.

Kumar (2000), in her work on indigenous and colonial forms of education in Benares in the 19th century, shows how merchants at the turn of the 19th century found a British liberal education a waste of time. Their resistance to colonial education was that it wasn't directly useful to their future careers (in this case, the buying and selling of materials). Kumar (2000) shows how this resistance was also resistance for other things – pushing back against the British cultural dominance. The play between the 'rote' and the 'creative' can't be pit as belonging simply to the realms of traditional/modern nor colonial/anti-colonial. In fighting to return to some forms of 'rote' education, she demonstrates how they were creatively asserting their right to maintain social reproduction of their community.

How to drag a mouse

Let us return to the classroom where Zainab is instructing the class on how to insert and change the shape of photographs. After listening to the lecture, the first activity of the day was to practice expanding and shrinking the size of the picture by grabbing one corner of the border and dragging it in, to make it smaller, or out, to make it larger. Zainab instructed all students to practice this, directing them in Urdu about which line they should grab with the computer mouse, "*dash border ka vala, dot ka vala*" (the dash border one, the one with dots). The use of Urdu contradicts the multiple signs in the classroom stating: "ENGLISH ONLY", the mandate of the institute. In classes, however, on most days instructors utilize Urdu or Telugu as few students comprehend the instructions when given only in English.

Even after this linguistic clarification, students were still looking around at other students, wondering if they were the only confused ones who are confused. Zainab circulates the room checking out how students are doing. As she does this, she realized that many students were struggling because she didn't explain how to use a computer mouse to hold down the corner of the picture: you must press one part of the mouse and maintain pressure while dragging the corners of the picture in or out. She asked the class to stop and turn towards the front to clarify how to use a computer mouse.

The rote pedagogical structure at times made clear what other types of literacy students were expected to learn before going on the job market. Whereas the class curriculums were centered on very specific goals – such as learning how to drag the corner of a picture to manipulate the size of an image, instructors had to fill in the teaching curriculum by stopping to teach the body how to use the technology, or to clarify points in languages other than English. While the content of the classes is thought of as very modular and self-evident, the content of learning how to change the size of a picture, or type, is connected to larger social worlds that students are expected to master; by looking at this we can see how social power works.

For example, when students practiced typing, it was on an English typing software. They often stopped to ask me the meanings of the English words they were typing. For typing, it didn't matter if you necessarily understood all the words – but what mattered was typing the correct letters as quickly as possible. Typing was the most clearly quantifiable skill for applying to jobs. Aneesh (2015) finds a similar pattern of knowledge in training centers for call centers in Delhi. He gives an example of students keeping spreadsheets of all of the states in the United States and their capital cities, in order to be able to quickly mention something relevant to customers on the other side of a call center line. Aneesh (2015) points out though, that this form of knowledge is

utilitarian—it doesn't share the nuance that he, as an Indian who moved to the US for education, has gained about cities' reputations, relationships with each other, or affective relationship with a place. He admits that on paper he knows less about all the capitals of the US states than his interlocutor, but that that knowledge is fragmented. Similarly, students—while writing English—don't necessarily (for this purpose) need to know or understand what they are typing. The phrases, stories, and jokes that comprise the typing practice didn't matter to the students; they are broken down to their constitutive fragments, individual letters that could be typed (with speed).

For most of my interlocutors English was their second or third language and the effort to understand the English words for MS Word commands was demanding. My interlocutors were often surprised that I—a graduate student from the US—used Microsoft Office quite frequently yet knew very little about the details in the drop-down menus. Being able to learn a computer or software system in a trial-and-error way depends on my privilege of growing up with ready availability of computer systems, and on a curriculum of informational literacy throughout my school education. And, to go back to Aneesh's (2015) point about feeling comfortable, for my interlocutors encountering MS Office for the first time at age 19-24, they employ the strategy of learning it in and out to feel more comfortable with the product. In countries with high digital information literacy rates, curriculums are often built on learning how to look up something if you need to know it – but on learning only the basics needed for a class.

Because students didn't yet know what they were going to be using their Microsoft Office skills for—a secretary at a university, designing a sign for a sale at a clothing shop, or taking notes as an office-boy at a pharmacy—they took detailed notes that emphasized *every* option in the menu. Aneesh (2015) points out that part of the effort put in to memorize terms that he, someone who lived in the United State need not know, was to mitigate the times when said

person would fumble on the job, to display an aura of ease. I read my interlocutors detailed notes of each and every part of Microsoft Word in part as a legacy of a familiar type of educational pedagogy and in part as a way to ensure that they were comfortable with the software, particularly when the software's words, titles, and commands were not in their native language.

Filling Boxes // Writing code

When I spoke to successful IT career workers in Hyderabad, those who held high-powered positions and who had done well at various companies over the years, they were curious about what exactly was happening inside the computer training incidents. After I explained the classroom pedagogy, they launched into diatribes about why this form of education was precisely part of why it was so hard to find good people for jobs, though for every job opening hundreds of people submitted applications. In my conversations with them, One day, I explained a typical day in a class and the overall course curriculum to an IT veteran, Raju. He replied:

> This is the problem with IT and engineering education in India. It is teaching students modular skills, not problem-solving or critical thinking. What we've found is that students who have strong problem-solving and critical thinking skills can learn new systems, but if you hire a student who has been trained in this way in a particular software, then you have to retrain them on the job. The software changes each year, but students are stuck with this one idea of how to do something.

Similar to how Raju perceived the computer training centers, rote learning is often pitted against creative education and work. Amrute (2017), in her work on Indian IT workers in Germany, shows how her interlocutors view their work as creative when outside stereotypes view them as being rote programmers of a low skill level (Amrute 2017). She shows how one of her interlocutors feels, while coding, feels "as she does when she's cooking. In these moments, she is

in control, knowledgeable, and practiced" (Amrute 2017: 328). What may appear from the outside to be rote may not feel rote to my interlocutors. As Farha notebook displays, students put a lot of pride, effort, and energy into learning the information, such as a detailed list of commands in Microsoft Word.

Pitting rote memorization and the reproduction of tasks versus the creative power of coding, is one of the ways in which back-end (service IT work where modular tasks are completed) and front-end (writing software code) work is separated; this separation becomes a class marker. Raju, from a privileged upper class perspective is suggesting that they should be educated differently, articulate his class position. Students' ability to apply for jobs is limited with their knowledge from these institutes, and this circumscription of available jobs acts as a demarcater of service-level IT work. This explains why Zainab, the instructor, once told me with embarrassment, that even *she* took one of these certificate courses before she continued to her college and Master's degrees.

Embodying Literacy

Photo flipping

While in class students were often listening quietly, but during practicum time, lunchtime, or before classes students chatting with each other and playing with their phones. During these times students often got out their mobile phones and shared pictures, WhatsApp groups, or text messages. While on the one hand this is the new normal of how people spend time, it was a display of a different type of literacy: that of navigating a smart phone. The most

common activity was the sharing of pictures – women and men would sit in groups while one shared pictures from a holiday, wedding, or mundane activities at home. While students attended institutes primarily to learn certain forms of technical knowledge – that of Microsoft Word and Typing – taking and sharing pictures is another form of technical knowledge.

Performing literacy of smart phones was simultaneously a marker of class. At SMART Center, about fifty-percent of students had access to a smart phone – at the CDS center almost all students had a smart phone of some capacity. There were four women at SMART Centre who did not have cell phones. They would borrow people's phones. The name, brand, and model of cell phones mattered and students were up-to-date about which phones were the hottest at the moment and exactly how much each phone cost. Many married and engaged women recived their smart phones as gifts during their engagement or as a wedding gift. Walter (2016) has written about the practice of gifting smart phones during an engagement period in South Asia (a ceremony traditionally before the two to-be-married people know each other well) as simultaneously a way to build a relationship—even if not in person—prior to marriage, while at the same time opening up potential for surveillance on behalf of the man, who is now able to call at any moment and check-in on where their partner is, and what they are doing (Walter 2016). Many students at both institutes shared their phones with other family members, and may borrow a family member's phone for a week or two and very visibly show it off while they have access to it.

Gendered Expectations

At SMART Center, women came for classes in the morning and men in the afternoon.

This was common for educational institutions in Muslim-predominant neighborhoods in Hyderabad. Often, female students would be finishing up typing practice or another activity in the computer room when men would start to enter for their class session. Women would often immediately start to pack up, some would re-tie a scarf covering their head, and exit without engaging men. The talk became more hushed. While there was gender separation among students, the staff was evenly split between men and women and they shared a staff room, lunch room, and bathroom. As Mahmood (2005) explains, it is indicative Islamic Revival movements that women are presumed to attend institutes of higher education, yet the educational spaces lack the structure for pious behavior and so, as a response, women should avoid men and make clear their ethics through other means, such as a head-covering.

In the breaks in class, conversation often turned to gendered hobbies and interests. One day in class at break, the men were discussing (and arguing about) which games were best to pass time with. They described games they knew: *kabari*, cricket, and *karom*. On the same day, the topic of conversation for the young women was on what fashion styles were 'in' and where the styles were appropriate. One girl points out that the 'in' styles include "half *saris*, *palazzos*, and long *kurtis*" while another points out that jeans are passé and jeggings have taken their place. In Mahmood's (2005) work on subject formation and embodiment in religious educational sites for women in Egypt, she sees these education sites as spaces that "train them in those sensibilities, thoughts, and modes of behavior" (Mahmood 2005: 102). The computer training centers taught students how to act as gendered people facing the job market.

Mahmood (2005) argues that everyday bodily practices and dress shape subject-making, and not the other way around. Taking this lens, the conversations about what to wear and who wears what in turn shape women's' subjectivities. Beyond dress, the corporeal activities of how

to use technology as well as what spaces to use technology in (in the closed-off computer room) aim towards "making prescribed behavior natural to one's disposition" (Mahmood 2005: 131). In their conversations on outfits, women would specify to me who wears what. Continuing the conversation on trends, one explains to me: "half saris are popular now for Hindus, while palazzos are popular among Muslims". Mahmood further contends that an attention to how corporeal practices affect internal lives allows us to see how "very different configurations of personhood can cohabit the same cultural and historical space, with each configuration the product of a specific discursive formation rather than of the culture at large" (121). This is an important point: among my interlocutors, while all roughly the same age and all in the same education program in the same neighborhood, there were different and specific configurations of femininity, something I will explore further in Chapter Five.

The placement officers at the institutes often made comments about how hard it was to match women with jobs, explaining that they were easily swayed to leave their job at the time of marriage or childbirth. The institutes also lacked resources to help women when something like this would come up. About two months into the institute, a student, Shaheen came to the institute one day and announced that she would have to drop out. Her husband, who had a pretty flexible workday as an electrician, could cover—along with her mother—for the care of her two-year-old son while she attended the morning course. However, her husband's schedule the last few weeks had been erratic and days came up where her son Rizwan didn't have a place to go. Shaheen confided in me and I offered to talk to the institute head to see if they could point her towards any alternate resources, such as a short-term daycare if she were to begin working after the institute. When I brought it up with the administration at the institute, their response was that she

should have the wherewithal to have this conversation with her husband and figure it out; they commented that women who drop out for reasons like this aren't committed to the program.

The uneasy analysis that Shaheen's child-care situation was due to her lack of commitment to the institute shows how women are often caught in a double-bind. Shaheen had been relying on her family for childcare, but her mother recently ended up in the hospital, and her husband (once his work hours picked up) made clear that he was not going to be responsible for figuring this out. While these institutes offer skills and possible job-placement, many mothers struggled to access resources, such as childcare services, that would make it possible for them to participate in the same way men did. Similar to how students were full of pride in their education that others consider rote, these women were intensely proud of their daily commitment to learning the computer, and this was sometimes not compatible with the ways their husband's or families viewed it.

At the CDS center, gender norms and hierarchies were enacted in different ways. My first day sitting in a class at CDS, I counted seventeen men and three women. The women sat clustered in a bunch at the side in the front of the classroom, making it easy to be the first to exit the room. In Ameerpet – although women were in most institutes—the sheer outnumbering of men to women both displayed the gender disparities going into computer work in the city, but also gave the neighborhood a reputation of not being safe or appropriate space for women. When I mentioned to the institute in Mehdipatnam that I was going to start attending courses at a similar institute in Ameerpet, the placement officer warned me to reconsider. He said "Ameerpet is not like Old Hyderabad, it is new, fast, quick-moving. You can't assume your safety. Go only in the daytime, and please let us know when you are going". The associations with Ameerpet—as a center for IT education in Hyderabad—being 'fast' and potentially unsafe for women

follows in line with the reputation of IT corridors and neighborhoods being sites of sexual harassment of working women (Patel 2010).

Proving Literacy

Speed

One day I was at CDS and a student, Kranthi, asked if I want to review material with himself and a few other students—Reshma and Gayatri—during the one-hour practicum after class. We were one week into an MS Office course at CDS, and as we shifted from the lecture room to the practice room Kranthi exasperatedly explains why he is here: "I learned MS Office before but I forgot all of it". As Kranthi, Reshma, and Gayatri settle into their computers, Kranthi quietly asks the others what their typing speed is: "What is your typing speed? Mine is 23, 24. I'm trying to get it up to 30 words per minute". Reshma is embarrassed to say that her WPM (words per minute) are nowhere near that fast. However, for Reshma, this is not as big of a deal as it is for many of the students. Reshma is one of the few students I interacted with who already holds a steady job – she is a dentist – yet she is taking the MS Office and typing courses because her dental training never included any computer skills. She says that in the dental office they are transitioning to computers and that the secretary must enter things for her; she wants to be able to enter those herself. Reshma will apply her typing skills to her current job, whereas most other students were spending extra hours in the typing labs trying to raise their WPM.

Discussions about how quickly students could type were common in conversations about applying for jobs. Many of the jobs required a 30-words-per-minute minimum typing speed, and more prestigious jobs required more nimble fingers. One day, about five weeks after one batch of

students ended at SMART Centre, I returned to the institute to find two women from the previous month. I asked what they are doing and they respond: "We forgot everything! Still haven't found a job so need to come back in and practice typing speed. Our typing speed has dropped." The few students who had access to a desktop or laptop computer either at home or at a school were at a great advantage of being able to practice outside of the short hours at the institute. Such skills—ones that require muscle-memory—were lost quickly after the training and often acted as an impediment in the job search. While students could (and did) copy down the keyboard letters into a notebook, they lamented how practicing typing this way was not effective and how they needed a physical keyboard to practice on.

Culture of Certification

While digital literacy programs are ostensibly all about the computer, I found students needed to be literate in more ways than just on a computer. Paper documents filled students' experiences at the computer centers; these paper documents, such as students' daily notes and more substantial copies of Microsoft Word, show that paper comprises a large part of what is considered 'digital' education. Hull (2012) reflects that his everyday knowledge and use of electronic documents, such as email, shapes his understandings of paper ones. In this chapter, I conversely reflect on how the paper documents that students produced and earned at institutes—notes, copies of the software, and certificates—help us see the specificities of the new media technologies that take up a large part of this dissertation. Scholars of new media technologies (Smith and Marx 1994) remind us that newer technologies do not represent a neat break from previous ones, but rather build on them. Though students are attempting to get jobs with

computers, paper documents make up a larger portion of their education and job-application experiences.

Students received the material paper certificate at the end of the course, but this process varied per the institutes. At CDS, there was an assembly line of certificates in the back end of the typing room, and one woman had the job of preparing and stamping all the certificates. On the last day of a course she would have a list with students' names on it (those who had paid and passed the examination), and students would come verify that they matched the list. At SMART Centre, because classes ended only once every three months, and there was only one course at a time, there was not one employee who handled the certificate stamping. Here, students had to come collect their certificate a week or so after the last day of classes, as the instructors and administration all had to apply the necessary stamps and signatures. What this meant was that months after the institute, some students had not returned to collect their certificate. If someone had a job offer and needed to produce the certificate, they would surely find time to return to the institute, but for many students it was out of the way of their daily routines, and weeks slipped into months.

One day I am at Zainab's house, sitting on her bed as she pulls down a binder of certificates, diplomas, and awards she keeps on her shelf. The binder is one to two-inches thick and each item is kept separate in plastic sheaths. Now that she has attained a job and is pursuing her post-graduate education (Masters in Computer Science, distance), she shows me her computer-training certificate with a degree of embarrassment. She says: "See, even I went to one of these institutes and got a certificate. After inter college I thought I needed to learn typing and Microsoft Word, as my inter-college did not have any computers on its campus, so I went to this institute to gain the skills". After showing me her binder of certificates, Zainab asks if I want to

see her fathers' certificates. She attributes one certificate to the positive fate of her family getting to move abroad and subsequently to her ability to currently pursue her education.

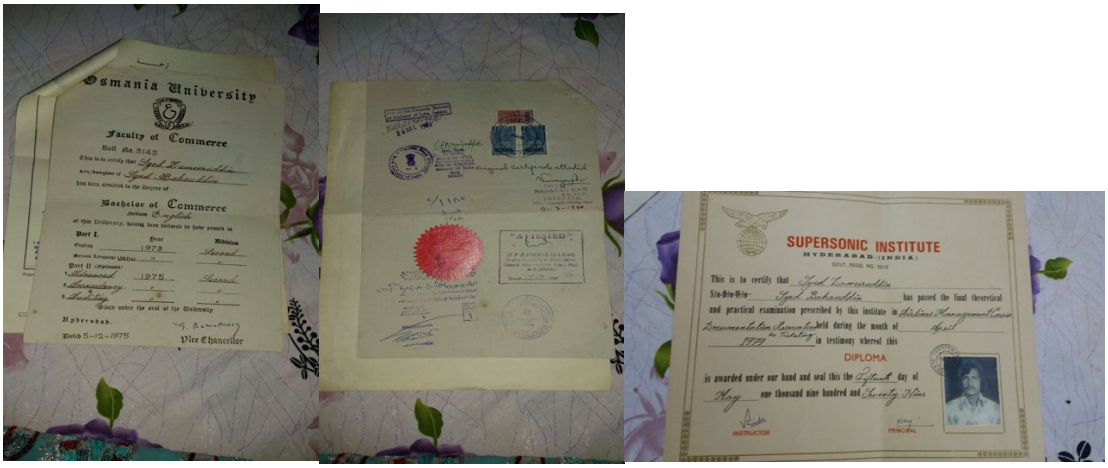


Figure 3.2 Education certificates and official stamps

The first, as you can see, is a university diploma from Osmania University, the renowned public university in Hyderabad. However, she explains that it is rather the certificate he got at the "Supersonic Institute" that enabled her father to apply for a job in Saudi Arabia in the 1980s and move his family there. At the "Supersonic Institute", her father received a certificate in the documentation, reservation, and ticketing procedures for airlines. With this certificate, he procured a job working for the Saudia airline and the family moved to Saudi Arabia, as the 1980s being a bad time for Muslims economically in the city. She flips the certificates over to show me the wax seals, stamps, and signatures that verify the certificate as valid.

In students' homes, it was common practice to keep meticulous track of all certificates or other paperwork proving something about themselves. In many in-home interviews students asked if I wanted to see their certificates: one directed me to a neatly folded pile of papers stacked high above their clothing on the main shelf in their apartment, while another pulled out a

binder with each paper separated with plastic sheathing. I follow Hull's (2012) way of looking at documents, where he argues that the materiality of such documents can "index the discourse genre that its inscriptions represent" (Hull 2012: 17). In situating certificates in this way, I am less interested in analyzing the certificate at face value and more interested in how they are aspired to, perceived, used, safeguarded by my interlocutors, and what these actions communicate. This culture of bureaucracy ruled by paper documents allows us an analytical lens for looking at the certificates my students, and their parents, strive for, collect, and protect. In comparison, I thought of my college and post-graduate diploma and wondered if I knew where the paper copies were – I kept digital files which I needed somewhat regularly, and if I were applying to certain academic grants they would ask for an official copy, which I ordered separately from the university. But here, a combination of a strong cultural background of paper certification and lack of practice and trust in digitization made it imperative that students keep their paper documents in pristine condition.

Hull (2012) acutely points out that anthropological analysis of such papers has been absent in part because we participate in the same processes and produce similar paperwork. Students' certificates are not unique; as academics, we are used to receiving such documents proving the end of our degrees, and we must produce and circulate these documents at any sort of gate-keeping moment, such as applying for grants or teaching jobs. Interestingly, the same cannot be said for the elite IT sectors in the United States today. For an industry that at its helm has prominent men who never did receive college degrees (Bill Gates (Microsoft) and Mark Zuckerberg (Facebook)) the corporations never ask for paper copies proving college-degrees or certificate courses, but rather put more weight into the experiential interview processes they have

created (of course, college name-recognition still carries a fair amount of weight). So part of this culture of certification may be marking the type of job students are applying to.

Hull (2012) also reminds us of South Asia's colonial heritage of the British, which became known as the *Khagazi Raj*, or rule by document (6). The stereotypical image of the ongoing legacy of the Khagazi Raj may be illustrated by every researcher visit to the FRRO, or the foreign registration registers office. Over my decade of studying, working, and researching in India I have visited the F.R.R.O. many times. The first time I entered the officers room to get a signature to extend my visa for a few weeks while I finished up a course. The room had a dim, dusty glow, with a slow fan whirling above. The government official sat behind the desk and as I sat down opposite him, I slowly took in the waist-high piles of paper that took up the majority of the room, smaller stacks tied together with twine, all awaiting one of the various stamps on his desk, or perhaps his signature. Every time I would go to the FRRO I would brace myself for what was wrong with my document – where the signature was, that the signatures didn't match, or that I was missing a piece of the application. Hull (2012) details many such office scenes in his book on paper bureaucracy to point out how the material bureaucracy (the paper document, the wax seal, the stamp, the signature) communicate an illusion of due process, a belief in a system that is completely rational. The computer certificate also communicates a rational and linear system: once a certificate is produced, it will open more doors for jobs.

Students understood that this proof of literacy was used for things beyond getting a job. The computer certificate follows other forms of certification. As I was speaking with a man who runs a well-known social welfare NGO in the city, he told me that "The certificate centers aren't very interesting. In the 1970s and 1980s people went for seamstress certificates and AC certificates, now everyone must have a typing certificate." He continued to explain that for

women, this was primarily a means for a better marriage proposal – just as the sewing certificates of the 1970s were (and continue to be in some areas). Biao (Biao 2006) shows how IT education and jobs in the early 2000s in Hyderabad are used strategically in marriage negotiations. His quick dismissal of the certificates as purely utilitarian go against the fulfilment the daily practice of leaving the home, learning something new, and dreaming about future possibilities give many of my interlocutors. However, others did place immense pressure on the certificate to produce outcomes in terms of jobs, material wealth, and marriage prospects. One women, Likhita, explained in tears how her parents had bought a house out of their price range after she completed her degree in engineering and was finishing up her computer-training course at SMART. She had, in part, convinced them that this education—and her certificate—was going to produce surplus material wealth both because she was going to get a job and that her parents would get more money through her marriage. Likhita is now facing a double-expectation: she is not only expected to marry, but is now expected to earn more from her marriage and to continue earning to help her parents pay for the home, which after marriage (when traditionally women go to live in the man's house), she may never live in it.

Spam & Cultural Sieves

Students were expected to know how to use email to apply for jobs, and often jobs had a trial email send-and-receive to make sure students knew how to use email and could send a simple business email. This wasn't a formal part of the class curriculum at either institute. In between moments in class and during the practice times, students would often work on setting up their email-if they didn't have one yet, or check their email on the computer. One day I arrived in

class and sat down. Munawar, a student sitting next to me that day, whispered to me asking to help her create a Gmail account. She said she was applying for a job and wanted me to look over her resume and then help her get her own email account. I sat down and directed her to the Gmail page: this would be her first email account.

Munawar's story of how she landed in this computer training institute is atypical. She successfully completed her K-10 schooling in India. After, she received a scholarship and completed her Intermediate, the two years of 10th and 11th class prior to college. In Intermediate she completed a course is Biology, Physics, and Chemistry. She was awarded another scholarship (a minority scholarship) to pursue her college degree. She began her college degree and had completed two years when she fell ill and became unable to go to classes. Her health spiraled, and she eventually had to have her kidney removed. Her immune system remains compromised from the procedures and medication, and she wears a protective mask around her face. Currently, she pays 15,000rs a month for medications. Health insurance here is still a new idea, and whereas government jobs and big MNCs, along with some newer IT startups offer coverage, it is very rare for families to have coverage and near impossible to find coverage with a pre-existing condition. When I asked her what brought her to the institute, she said that she had to drop out of college and get a job. After getting a certificate, she hopes to work for a few years and save up some money to help pay for the medications and then return to complete her Degree and then pursue an MBA.

I sat down and walked her through opening a Gmail account. The first page asked for her name. She typed in Munawar for her first name, and then Begum for her last name. The next page it brought us to asked her to pick her Gmail username – what would become her email address. I explained that because many people have names now it may not be possible to get just

her name and that she might have to add a number onto her name. When asked to put in a number, she puts down 786 (a lucky number in Islam). This number combination with her name, however, was taken, and she settled on 11. With her new email address, we enter Gmail and are looking at an empty, brand new inbox. She looks at me and asks in Urdu, "ok, so now how do I send a message?" in Urdu.

We face the same issue with MS Word and typing, that the inbox is filled with English lone words: compose, sent mail, trash, spam, subject. I go over the word "compose", an unfamiliar English word to her, explaining that it means to "write a letter", referencing the material object email is mimicking. I think about this for a minute. I show her "compose" "new mail" and inside the email creator box that "Subject" refers to the topic of the mail, "To" is the email address of the person you sending it to, and "body" is where you write your letter to the person. I tell her to send me a test email and I write my email address down. She looks at me and asks what to send, and I respond "anything, just say hi!" She prepares the email: subject line, "Hi", body: "Hai madam how are . this is munawar." She presses send. I go get my mobile phone and say I'll show her how the email arrived and reply so that we can see how email conversations work. Huddled over my phone, we continue to refresh the Gmail page. No message. I go to see if it is in Spam—nothing.

After a few minutes of refreshing my email page I say: "Ok, I'll send you a test message." I compose a message, subject line "Hi", Body: "Hi Munawar, This is Kate Madam. Email test!" I tell her to refresh the Gmail page to see if it arrived. What comes up instead, is a page asking Munawar to re-sign into Gmail. Upon signing in, we come to a page I've never seen before in Gmail, in my many years of personally using the service. The page states "why your account has been frozen". Gmail lists the following possible reasons, one of which is: "You

appear as a spammer". I am sitting there and try and explain, that sometimes, one could appear as a "Spammer" to Gmail's spam-filter algorithm. Munaaer asked me what a "spammer" is.

I try and explain that it appears as *naqli* (fake/imposter) email accounts, and she asks why hers would appear that way. My best guess, which I don't have the heart to explain to her in the moment, is that her English grammar and spelling, in combination with her location and name, make her appear as a spammer. I went into my email and wrote her two short emails: "Dear Munawar, This is Kate writing from the SMART Centre. Just checking to see if my email works. Sincerely, Kate". The second one I structured in a similar manner, and attached her resume draft to it. Then I asked her to send me an email. It went through, though still went to my Spam folder. I went into my spam folder and manually marked it "not spam".

In his article on the ontology of spam, Kockelman (2013) views spam as one type of sieve, or "any device that separates desired materials from undesired materials" (34). He explains that a spam filter deciphers desired material from undesirable material based on a set of features in an email message such as "letters, words, headers"; the algorithm figures whether something is spam or not based on its built-in statistical assumptions (Kockelman 2013: 40). I am going to expand this list of features to include names of senders as well as grammar. Scholars of algorithms (boyd and Reed 2016; Hargittai 2007; Kirkpatrick 2016) have long argued that algorithms are biased and tend to reflect the bias of people who have created them. Nakamura (2009) argues that "computing culture's history is intimately connected to the history of racial classification and sorting" (158). Kockelman (2013) further argues that spam "ontologies drive interpretation" – based on certain features a message displays (again letters, words, headers), the algorithm decides what kind of message it is and separates it into a pile of *spam* or *not spam*. Kockelman (2013) argues that we should read algorithmic sieves – for example spam filters – as

having “beliefs and desires built into them” (48). In Munawar’s case, for example we can imagine the spam filter labeling email messages coming from certain locations (IP addresses), with certain styles of names (in this case, Muslim South Asian), and certain grammatical elements (missed punctuation, shorthand English) as spam.

Kockelman (2013) points out that though the spam filter may be in some way related to biases of the developers of the spam filter, it takes on its own ontological life and, thus, begins to form its own forms of biases. The spam filter—rather than a person—thus desires that this message be prohibited from reaching my inbox. “The values of the variables are usually steps ahead of the consciousness of the programmers (and certainly the users)—and thus constitute a kind of prosthetic unconsciousness with incredibly rich and wily temporal dynamics” (Kockelman 2013: 48). “when we make algorithms and then set those algorithms loose, there is often no way to know what’s going to happen next” (Kockelman 2013: 48, Bill Maurer personal communication). And, of course, we all have had experiences with non-spam mail making it into the spam folder, and vice versa. One could look at these as small glitches in the system.

However, these small glitches may also be seen as part and parcel to larger structural inequities. Gupta (2012), in his book on Indian bureaucracy, argues that the bureaucratic processes that regularly disproportionately affect impoverished sections of Indian society must be understood as the camp, building on Agamben’s (1998) theory, where the poor are purposefully let to die through a system that appears as “luck” and “random” but at its heart is not arbitrary to those who know how to navigate it as well as have the social capital to enforce what rights they have on paper. We can apply the same logic to being identified as a Spam by the spam filter – it could be seen just as “random”, but if we look closer at the cultural logic underpinned in the spam filter we might not let it off that easily. In a report on the future of big

data compiled by the White House science and technology group (2014), they acknowledge that: "algorithmic decisions raise the specter of 'redlining' in the digital economy-the potential to discriminate against the most vulnerable classes of our society under the guise of neutral algorithms" (Executive Office of the President 2014: 46). Being identified as a spammer from India is common place in other instances, after India was identified as the top spamming country in 2012 (India Becomes Top Spamming Nation 2012).

Conclusion

This chapter in many ways details the labors in the classroom of aspiring as students learn new things. This chapter also turns more explicitly to materialism – it focuses not only on the students in the classrooms, but also on the various technologies (mouse, notebook, cellphone, email software) that students comingle with. Part of this labor is in building relationships with these technologies and making them a part of one's everyday life and identity. While much of this chapter looks at the two prongs of artefactual and embodied materiality, this chapter introduces some of the prosthetic uses – where students identify the technology as being an extension of oneself in imagining the future. I further identify that humans are not the only ones who aspire – the email algorithm has its own aspirations. As a set of instructions on what to filter out and how, it has built in wishes for the future – to keep spam out – and yet we see with Munawar's interaction that its workings have very real consequences in the present. As the spam filter aspires to keep email inboxes tidy and clean, clear of muck, the way it has worked out to do so reflects and prioritizes a certain global positionality. I discuss how IT elites in Hyderabad judged the students' experiences at these centers as one of rote-learning, which they opposed to creativity and critical thinking. I attempt to parse out why rote learning makes sense to my interlocutors and ask what effects labeling their experience as 'rote' has. I also show how,

though it may be part and parcel to a rote education, students impart their own style to the work by embellishing notes, speaking in Urdu or Telugu in the classroom, and sharing pictures of pleasure time in a space of work. The rote, in a way, mimics an algorithm – it aspires to produce a particular outcome yet runs up against aberrations – such as the students speaking Urdu while on paper (and on all of the signs on the classroom walls) only English shall be spoken.

In this chapter I covered multiple different types of education that students participate in at the computer training centers. These include becoming literate in how to listen and speak in class, how to orient one's body towards the computer, and set up an email account. Each of these kinds of education do different things for the students and have different possibilities associated with them. To learn email carries the possibility of communicating over geographic space and of finding out about new opportunities. Learning how to appropriately dressed for a job after earning a certificate reiterates on past gendered ways of learning to carry one's body. Learning about official certificates enables students to mobilize pieces of paper to find new opportunities. Always attendant to these possibilities are also forms of policing: that of gender, of foreign names, of lacking 'official' documents. In this way, at the site of promise students learn how to mold themselves into proper corporeal practices for finding jobs in the tech labor market.

In the following chapter, I turn to narratives about jobs students receive and the role of the computer. While I have been tracing the artefactual and embodied materiality that goes into the labor of aspiring, in the next chapter I turn to the prosthetic angle. I find that these jobs disrupt a simplistic, singular idea of a computer or IT job in India and thus disrupts the idea of a singular computer.

CHAPTER FOUR

The Computer Multiple

This chapter in part answers the question: what is a computer? It began with the popular story of the arrival of the computer to India. From there, I move to stories from students that illustrate the multiple forms of a computer. This chapter is set apart from the other chapters as a collection of narratives about the computers students use at work, and the students' background stories. Placing these stories of the computer alongside student life histories allows me to do two things analytically: 1) see the multitude of things that students view as a computer and 2) see how the computer figures into their narrative of their past. In essence, this chapter looks at the computer in practice in order to tell a different story than the dominant story of the computer in India that opens this chapter. I argue that the popular image of what a computer is in India belies the lived experiences of my interlocutors and their work with computers.

Building on Mol (2002), this chapter in part is methodological in arguing that the computer should not be studied as a singular object but rather in practice – and this chapter details 'the computer' in practice with my interlocutors after they leave the institute. At the computer institutes, instructors inform students how to use the computer, which remains a singular object that takes the form of the desktop. But I find that as I follow students past their lives in the institutes and in practice and work, the computer multiplies. My methodological question thus follows Mol (2002) and asks "what acts of coordination hold a computer together?" I am interested in how the divergent material objects (CT scan, stock broker algorithms, smart phone, desktop) all cohere to be the computer – and what social work this does for my interlocutors. I found that what is iterative throughout these stories, what coheres them, is as much narration about what the computer is not as it is description of what it is. Something that

coheres my interlocutors' narratives about the computer is what it is not. For Rajkumar, it is not an irrigation management job, and it is a job outside of the confines of the village he grew up in, and his parents held jobs. For Krish, a computer is not a street vendor, for Rajesh it is not an agricultural job, and for Srija it is not a homemaker. What emerges is an ideology of contrasts that coheres the computer to its singular form – the form of computer that the training centers imagine, and that that Modi speaks of when he hand delivers a laptop to an agricultural woman (Modi 2015).

This chapter also explores the themes of aspiration, mobility, and failure through analyzing what makes up a successful job for these students. I realized that what made the job successful was neither that it was in the IT industry in Hyderabad nor that it was a ladder to a job in the IT industry (which were my hypotheses going into this dissertation), but rather that students found work interfacing with a *computer*. This is a reframing, once again, of aspiration to see what work goes into creating the present as a space where one has arrived at the goal of working with a computer. This computer took many forms: for one student, it was a handheld computer (smartphone) that he used to navigate the city for his job and to record sales for his company. For others, it was an electronic cashier machine at the Dubai-based fashion brand Max retail. And still for others it was the desktop computer that they used as receptionists at places such as colleges and pharmacies. For another, in addition to the desktop computer he manned as a receptionist at a medical diagnostic center, the presence of other computerized machines – such as a CT scan and the blood diagnostic system – gave him the self-image of working in a highly technical environment.

I further argue that the social work it does is to produce professionalism. Building on Jackson (2002), I use a phenomenological approach looks at how the computers and my interlocutors co-produce the relationship between computers and expertise. Jackson (2002) in his article on computer/human relationships are intersubjective. He outlines how humans foster close relationships with machines when they provide them with security, and come to see them as enemies when they break or work against them. The question is not "whether computers will 'save' or 'menace' " but rather that the way humans respond to computers are "grounded in habits of sociality" (Jackson 2002: 341). He points out that from a phenomenological standpoint "subject and object are not stable entities but simply words we give to two extreme modalities of human interaction –being actor and being acted upon" (Jackson 2002: 340). There are lots of different ways people make claims on the computer. So part of what I ask in this chapter is: what is the hegemonic way the computer gets instantiated? And how is this related to promise and policing?

In this chapter I also build on previous scholars (Biao 2008) in countering the popular story of the computer in India as a primarily urban phenomenon and illustrate how this urban experience builds on, and connects, back to the village and tertiary cities. I conclude this chapter by looking at how rumor polices sexuality, and how this plays out on the job market. In all of the stories the computer acts, for my interlocutors, as a potential catalyst for upward economic mobility. In this way, the students do seem to have embraced the story of the developmental model based on technological change.

The Computer in India

I first heard the story of the beginning of the IT industry in India from Ja Chaudhary, the IT policy maker whose bungalow I visited for an interview in *Chapter Two*. He told me the story of the arrival of the computer to India, and the building out of the IT industry, all by placing himself at the center of the story. Later, I realized that the story he told me was the dominant and assimilable story of IT's arrival to India. His success in the industry, along with his social, position allows him to tell the story and put himself in the center of it. I am going to briefly tell this story here. While the computer and the IT industry in India are often thought of as by-products of the economic shifts, commonly referred to as liberalization, in 1991, this narrative follows other scholars who point towards a longer history of policy shifts starting in the 1970s (Amrute 2012, Upadhya 2016). I need to tell this version of the story in order to build my argument in this chapter that there are multiple computers, rather than a singular computer that has been discursively produced around IT in India.

Ja explained to me that it all started with the Janata political party in the late 1970s banning the few US-based companies present in India in a protectionist move. In 1978, India gave notice to the two foreign companies, IBM and Coca Cola, that in order to operate in India they had to reduce their share to 40% foreign held investments for the operations in India (Sareeta Amrute 2012; Upadhya 2016). The companies refused and left operations in India. After they left, India needed a government body to maintain the multiple IBM computers (at the time referred to as supercomputers) that they were using at the government scientific and educational institutions. They founded the Computer Maintenance Corporation (CMC): a unit of people who were qualified to repair the IBM machines. Over time, CMC expanded beyond repairing computers and developed software, such as the IRCTC, or the Indian Railways scheduling

software. CMC, Ja explained, laid the foundation for the opening of the country to new IT arrangements.

In the late 1980s, Ja took a job as the first employee of Software Technology Parks of India (STPI), a government society built to establish a software exporting business from India. STPI worked to attract foreign companies to set up shop in India after the public expulsion of some in the late 1970s, and in 1985 Texas Instruments successfully set up an offshore facility in India, thanks to changes in government regulations and the creation of a new government-run institution to manage offshore ventures. They could do this after the 1978 law changed in 1984 to allow 100% foreign held companies to operate in India (Upadhya 2016). The first STPI opened in Bangalore in 1991 and laid the policy and legal foundations for the development of similar IT centers across Indian cities (Upadhya 2016).

The STPIs acted as special economic zones (though were not limited to geographic zone) that boasted a number policy changes and financial incentives for foreign companies that decreased 'interference' by the state (Upadhya 2016). Ja explained that this changed a licensing application for a foreign company to import technology from taking six-to-eight months to mere days. He referred to the state policies prior as the "license raj", referring to a rule by the government based on restricting licenses. Ja explained that two of the important changes they (STPI) implemented were: 1) a non-physical Special Economic Zone and 2) a "double window" processing scheme for government approvals. The non-physical SEZ meant that they gave an income tax holiday to companies who wanted to set up under the STPI scheme – whether domestic or foreign. Because the SEZ was not linked to a physical space, as some are, it enabled people to start companies out of their home and receive the income tax holiday under the scheme. The "double window" processing scheme meant that they would do at the same time

what used to have to happen in two separate 'windows' of opportunity with a government office. These two 'windows' were first, getting a license from the government and second, getting a data connection link.

In addition to placing himself at the center of the story, Ja also places Hyderabad at the center of the story of India and the computer. He notes with pride that the first computer manufactured in India was built in Hyderabad by the Electronic Corporation of India, Limited (ECIL), and that the first IT software in India was also designed and developed in Hyderabad by the Computer Maintenance Corporation (CMC) – in its building opposite Maitrivanam in Ameerpet. This narrative of Hyderabad being central to the arrival and proliferation of the computer in India seeps into my interlocutors' identification with the city. In this chapter, I show how some students have been in the city for generations while others found their way to the city for work opportunities; there was an explosion of migration to the city following the development of the IT industry in the city in the mid-1990s.

The narrative of offshore companies, the smoothing out of the licensing process, and the creation of special technology parks are what most people think of when they think of the arrival of the computer in India. This has led to inquiries around the computer focusing on IT parks and BPO offices. The physical computer, in this imagination, exists in one physical form: the desktop or laptop, both downsized from the original IBM supercomputer. The story of the computer in India leans heavily on a story of economic liberalization. However, the story of the computer has expanded far beyond the world of IT. In this chapter, the stories that follow illustrate that the world of the computer should not be limited to that of IT: the computer takes multiple forms, in different kinds of work spaces.

Rajkumar

Towards the end of my stay in Hyderabad, I went to visit Rajkumar at his new workplace, a medical diagnostic center towards the outskirts of the city. The diagnostic center was in Attapur, on the outskirts of the city. He had me meet him at pillar no. 180, a way that the ever-expanding city denotes locations based on the pillar numbers of the new highway. When I arrived, Rajkumar met me outside the building and then asked if I could wait in the parking lot while he got permission from his manager to show me around. He returned soon, said it was ok, and invited me in. His manager, the senior member of the medical lab, greeted me and explained that he had five years' experience working with medical technologies. The lab itself was about one year old. The facility occupied two stories of the building, while the top two floors of the building remained empty; they stood unfinished on the inside and outside.

The senior manager, along with Rajkumar, embarked on giving me a tour of the technology filling the medical lab and diagnostic center. On the first floor was the CT Scan room. They invited me into the CT scan room to meet the lab technician, Sonia, who was reading a CT scan on the screen when I walked in. She explained that this was the newest and most advanced CT scan machine. Next, Rajkumar and his manager led me to the diagnostic room. Here, two young lab technicians, both wearing plaid button-down office shirts and slacks, abruptly stood up from their positions sitting down engrossed in their smart phones. They stood by while the senior manager proceeded to give me a tour of various medical diagnostic machines: a blood centrifuge, a chemistry analyzer, and in an adjacent large empty room, an ultrasound machine. Rajkumar noted that his manager is allowing him to learn a bit about the

machines, even though his work doesn't require any of them now.

After the tour we returned to the front desk so I could see Rajkumar's job. His job was to man the front check-in desk by answering the phone and checking patients in on the computer. I sat down in one of the chairs acting as a waiting room, lined up before the check-in desk. Soon after Rajkumar assumed his position back at the entry-way desk, a pair of women entered the facility. Rajkumar signaled to me that I should document him checking them in, hand signaling snapping a photo. After visiting the center, Rajkumar asked me to send him the photograph of him at work over What's App.

While Rajkumar did have a job where he worked with a typical computer, he was very proud about the fact that his workplace included a variety of advanced computerized equipment, and he strived to move from the front desk to working with the CT scan or the diagnostic machine behind closed doors. When he asked for the pictures of him checking patients in, he showed pride in the work he was doing, and the space in which he was working. Contrary to the work his father did – managing the irrigation in his village – the pharmacy, with its clean white walls, phone, and computer – displayed a professional job. Along with the space, Rajkumar's outfit of a pressed plaid shirt, solid slacks, and closed-toed shoes also communicated to others in his neighborhood and on the streets that he held a job in an office environment.

Rajkumar lived with his family in Moinabad, a village (that has now been subsumed into the suburbs) about an hour outside of Hyderabad. When Rajkumar was young, Moinabad was a small, agricultural village comprised of 30-60 homes. While Moinabad in 2015 felt less like a separate village and more like an extension of the metropolis, there was a distinct difference in the build and layout of the homes, and the amount of land space people had around their homes. Rajkumar's house extends into a large yard, filled with palm trees that offer shade in the heat of

the day. The first time I visited, I found him on the back porch playing *carrom*, a popular board game, with his grandmother.

Rajkumar's father managed the water supply in the village. Rajkumar initially attended the local government school in the village growing up. However, in 1995, when he was in third grade, a Methodist school and church opened directly next to his home. He started attending this school in sixth class, and this is when his health problems began. As he describes it, all was going well with his academic work until 6th grade, when he started having medical problems. "There was a little cough in my lungs, and pain in my chest. I don't remember that much, I was young. There was pain in my chest, and a cough came, so I went to the hospital for one month."

Rajkumar later learned that he had tuberculosis. This story is important to Rajkumar's self-narrative, as his illness caused him to miss one month of school, which he attributes to later diverging from a path leading towards a good job. The month of school he missed was exam time, and as he missed taking the end-of-the-year exams, his teacher failed him. The teacher suspended him based on his failed grade and wouldn't allow him to enter the next grade with the rest of his class after the month summer break. This eventually led his parents to send him to his grandparents' home Nasik, in the state of Maharashtra, so that he could join school again.

When he returned from Nasik to Moinabad in 10th grade he found that his father was drinking a lot, and, while drinking, beating his mother. The family was in bad shape financially as well: there were no fees to support his brother in school, and they couldn't even afford the pants for the school uniform. Rajkumar tells me a story of his brother showing up to school in shorts, something that symbolizes youth and that only young boys wear, because his family couldn't afford the pants to go along with his uniform. At this point Rajkumar realized the family needed money and started working. He worked a number of jobs over the course of a decade,

though the one he held the longest was a trainer at his local gym. He blames the macho gym culture, along with the state of his family, as the catalyst for his drinking problem. He snapped out of it when his father died while drinking a few years back. At this time he got re-involved with the Church, which acted as an avenue for upward mobility.

When I met Rajkumar, he just started at the computer training center. Things were on the up and up for him. He was passionate about building a band with his youth group at church, and had several clients for his guitar lessons. Rajkumar mentioned that some years before, all he wanted to do was leave Hyderabad, but that now he felt opportunity in the city. That first time I visited Rajkumar's family in his home, his mom asked me over lunch "won't you pack him up and bring him back to America?" Rajkumar immediately interrupted and responded, "Don't listen to anything she is saying! I don't want to go to America, I like India. I like Hyderabad—I want to stay here." Now that Rajkumar holds a steady job, he has asked his aunt and uncle to fix his wedding with the girl he loves. He has been telling me the saga of this love story for a year at this point, and part of the problem is that his family doesn't have as much money as the girl's family, though they both come from Christian families.

Krish

Krish had just turned twenty when I met him. He had four sisters, one brother and his mother. He lived not far from SMART Center in an informal settlement in Nampally. His mother is now a housewife, but when Krish was young she worked by selling roasted *channa*, or chickpeas, from a large circular basket she balances on her head. His father has passed away but used to work in *kabari*. As a *kabari-walla* he collected old newspapers, plastics, and iron door-

to-door, and then took the collection to a recycling shop and receive money for the items.

Krish's parents came to Hyderabad for work when they were both around 13 years old. They came from a village in Mehboobnagar District, in Telangana, a few hours beyond the city's borders. Krish explained that they came to the city to find work because they didn't have any land to cultivate in the village. Krish's paternal uncle had already moved to the city and helped arrange their arrival.

Krish's four sisters are all married. Two are housewives, one works selling HDFC (a major bank) life insurance in Hyderabad, and the other cultivates land in a village where her husband hails from in a neighboring state. Krish and his brother resided at home with their mother, both unmarried. Krish's brother worked as a delivery boy on motorbike for Snapdeal, an Indian e-commerce site that has grown to be one of the largest electronic marketplace sites in India. Krish completed 10th standard at a government school near his house and then completed his diploma in polytechnic from Mahaveer Institute. Polytechnic is a type of Indian education institute that refers to a vocational course that produces a 'diploma' but not a 'degree'. It is a technical vocational college. He did the mechanical branch and completed that in 2015.

Krish found out about the computer training center through his newspaper delivery job. While he was completing polytechnic, a vocational diploma course, he was paying for tuition in part by delivering newspapers each morning, from three-to-six in the morning. One of the people he delivered paper to was the office boy for SMART Center, Praneeth. He had completed his exams for his polytechnic diploma and was trying to figure out how to apply for a job other than newspaper delivery, and one morning Praneeth said to him: "Why are you wasting your time? Go join the Smart Center!" He explained to Krish that he would get some knowledge, computer skills, and a good job.

Krish only stayed at the center for a month and a half as he landed a job halfway through the course. The job Krish took was a job with a social business (a business that has dual goals of social and profit) to sell everyday technologies, powered by solar energy, to non-wired communities in Hyderabad. The social business was started in Bangalore, India, as a collaboration between an Australian expat and a Bangalorean businesswomen. It was founded on the idea of bringing solar technologies to communities in urban India without wired electricity, but recently has expanded to include other micro-financing options, such as a laptop. The main item that they sold was a small solar lamp that both provided light inside dwellings and had a cell phone charger that was powered by the sun's rays. Paradoxically, with the growth of the IT industry and SEZs in Hyderabad, the number of informal communities (otherwise known as slums) has risen drastically since the 1990s, with the majority of migrants moving to the city for construction labor (Suares 2017).

The model of the social business was that at each local office there was a manager who was a volunteer from abroad. This person served in the role after raising money to enable him or her to take a six-month sabbatical and spend time getting a new city up to speed. These outsiders often did not have any knowledge of India, but came from business backgrounds in Australia, France, of the US and wanted to switch the direction of their careers to focus on social venture stuff. This meant that the office was always full of expats, many of whom were in India for the first time. The manager lived upstairs in the same compound as the office.

While for many of the expats, visiting unwired communities was a novel and temporary experience, for Krish, who himself grew up in a community that only recently got wired, this was everyday life. While the city expands and new roads and buildings develop, there are everyday arbiters of what the 'city' constitutes. One day, in an Uber car on my way to Krish's

home, the irate driver complained to me: small, narrow lanes that cars can't fit down, which one day my Uber driver nagged me about me about "Where are you going?! This is *not* the city. Cars can't go here and there are goats in the road". By 'not the city' I took that he was frustrated by the small, narrow lanes in Krish's neighborhood, lanes that were filled with street vendors, animals, and motorbikes. While neighborhoods such as these comprise large swaths of the city, the city geography is orienting itself increasingly towards the new, wide boulevards and tall buildings, such as the one Krish travels to for work each day.

One day, I accompanied Krish at one of his days at work. We visited two communities. Before we left the office he pulled out his smartphone and showed me the maps of all the communities in Hyderabad. He chuckled at some of the names, such as "Mini Novotel", referring to a community sprouting under the shadow of a new five-star hotel, or "Goat Farm", referring to a community where herds of goats tended to congregate. I asked who had named them, and he explained that most of them were mapped by the expats during their volunteer hours. In the communities, Krish went door-to-door to families who had purchased items from them: there he collected the payment due and produced a new receipt for them stating what their balance was and how much they would have to pay by what date.

We hopped out of a rickshaw by a bus stop on Road Number One—a street lined with designer boutiques, a few malls, and offshoot roads that opened into gated communities of luxury flats and bungalows— to visit the first community. Krish directed us to the empty field behind the bus stop and warned me that it would not be clean. After crossing the field for about five minutes the community came into view. The monsoon rains began in earnest as we were crossing the grassy lot. As the rains became imminent, people quickly gathered their laundry hanging out to dry from strings and rushed them inside, under their blue tarped roofs. We

gathered in one home, sustained by chai, as the rains pounded. When the rains calmed, Krish checked in on customers' payment balances, problem-solved any issues people were having with the solar charger, and asked if anyone wanted any of the other items Pollinates sells, showing off the new, low-cost tablet the company had just begun to stock.

What struck me about my day accompanying Krish to these homes was his display of expertise of technology. The company had just begun to sell a low-cost laptop (that could be plugged into the solar charger) and families had heard about this piece and asked him to show it to them. He would pull it out of his backpack, power it up, and display the laptop. In one home, he fixed a wire connecting the solar panel to the mobile phone charger. Others in the community asked about his smart phone, which he used to mark down payments and keep track of families' debt. One man asked him how much it cost and he explained that it was given to him by work, for work. No one in his family prior to this had ever had a smart phone and it was a huge status symbol to carry it and to announce it was distributed by work.

He then explained to me that based on the computer-training course he was able to use a computer (pointing to his phone). He showed me all the computer skills he uses for his job each day: the map that he read of where the locations are he has to visit, the calculator he used to discern how much people owed him, and the accounting software app that his company used to keep track of who bought what and what payment plans they are on. Krish asked me to take a picture of him with his computer, the phone, in front of some of the homes in the community.

At this job, Krish's salary was dependent on how many sales he had each month. The first month his sales totaled 6,716 rupees, or a little more than $100 dollars. At the time of interviewing him, he had calculated that his second month's sales were more and predicted his monthly salary would increase to 10,000 rupees. He worked Mondays to Fridays for about five

hours, and then Sundays for eight to nine hours, as this is the day when most people were at home and not working. The company did not reimburse him for the auto rickshaws he had to take to get around the city to visit the communities; his family didn't own a motorbike and the bus system was too slow for him to maneuver around the various communities. This meant that he spent a good portion of each month's salary on transportation. At this salary rate, he gets paid more than day laborers, or street vendors (mother), or *kabari* workers (father), but he doesn't get paid more than an auto rickshaw driver or tailor. This is not uncommon, as I demonstrated with the table of job salaries after completing a computer-training course in the introduction.

Though Krish's job looks very different from an IT job, he might have more upward mobility given the unique makeup of the company. Krish received an offer to attend a higher-level training program an English-language institute for free by learning about him through the Australian manager at the company (the IT and English training center was run by a fellow Australian). Krish also gained valuable English-language skills by spending time at the business office interacting with the visiting interns. His English, over the course of the year I was in Hyderabad, advanced more quickly than many of his fellow students who took jobs at places where English was not the dominant language in the workplace. As the first local worker at the social business company, Krish was introduced to visiting speakers who came through the company to give lectures to the foreign volunteers. Many gave their cards to Krish and told him to contact them or reach out to them for advice and mentoring in his career.

Krish's job and future possibilities echo another sentiment I heard while doing research: that students from impoverished families had an increased chance of finding work in a business or corporate setting rather than a government venue. I was speaking with one of the job placement officers one time about students' financial backgrounds effect effects their job

placement and he said:

> Poor guys get jobs sometimes, it depends upon the employers and companies, I think in the corporate worlds there is still transparency, while in the government sector there is a lot of influence, like back-gate entries. I'm generalizing, but the corporate world is more about discipline, transparency, and accountability. So people who have skills – who have talent – they get into corporate world.

There was a strong association with social power and corruption when talking about government jobs. On the other hand, students and instructors seemed to connect the computer-training courses to the more flexible corporate world. Although one student did say that after their training course, and after working a job for some time, they wanted to try for a government job, most people associate computers with 'the corporate world', and they subconsciously associate an equality of opportunity and less social influence with those skills. While corporations such as Amazon and Facebook have publicly adhered to no-discrimination policies at their offices in Hyderabad, the places where many students received jobs did not have such policies in place, as they were not large corporations. Krish's experience at a social business, run in part by foreign volunteer hours, was a very unique work experience.

Rajesh

Rajesh was a student at SMART center in Ameerpet. At the time I met Rajesh, he was completing a certificate with a plan to go into Chartered Accountant (or C.A. as its commonly known in India). Rajesh came from an agricultural background in Telangana, near Warangal, a few hours outside of the city. His parents were farmers, and his father was one of the many who was taken by the epidemic of farmer suicides across rural India (Sridhar 2006). Rajesh explained to me that after his father's passing, his mother became depressed, and that as the oldest child he took charge of the family. After a few years, he decided to sell the land, deeming it not a wise financial investment, and moved the family to the city for education. Rajesh's classes up through

10th grade were free through government schools. Not eligible for reservations, as the family were upper caste Hindus, he and his sister received government seats through merit and financial-based assistance at a government intercollege a few hours outside Warangal. He explained that testing high on test scores was the only way to get reduced school fees, as he didn't quality for the SBC scholarships (reservations).

After intercollege, or 11th and 12th standards, he came to the city and explained his family's situation to the administration at the Lakdikapul Tasywa instituted. Based on his family's situation and his high scores, he received free tutoring for the Common Proficiencies Test (CPT)—he ended up ranking 10th overall in CPT and through this free coaching for one of the entry-level courses for chartered accountant certification. I ask him—as I asked all students I interviewed—if he wanted to follow in his parents' footsteps and farm. He responded:

> No, I don't want to be. We have 8 acres of land. This means the present value of the land is worth 4 crores. If we cultivate the land, of that four crores we can hardly get 20k-30k rupees annually, if we cultivate. We will get only 20,000-30,000 rupees. Maximum 40 thousand. My parents were cultivating rice, cotton, and sweet corn. Part of the problem is the farmers [and parents] don't know how to earn money. By this I mean that they did traditional agricultural cultivation. They didn't use many machines like tractors, or any rice cutting machines or seed putting machines. They didn't use, they did it all manually—by using man power only. Because of that man power only we had to spend more money on man power. Whatever the income each year, say we get 80,000, we had to spend about 40,000 like that, so maximum we get only 40,000.

Forty-thousand rupees annually amounts to around 3,300 rupees per month, or about $70. Rajesh explains that they were able to see some increase in the land value, after Telangana became a free state in 2014, and they sold it right after the state transition. The land probably increased due to the new irrigation lines or due to the land being near roads leading to the city. He wanted to wait longer to sell, but they needed the cash once they decided to relocate to the city.

Rajesh's mother was a homemaker, which he explained meant that she makes food, washes clothes, and keeps their home clean. When they first arrived in Hyderabad she found a job working in a factory for around 3,500 to 4,000 rupees per month to pay for their room rent. She took some time off when her kids began getting jobs to make ends meet for rent, but only two days prior did she join another factory. Rajesh explains that this was primarily to keep her busy: "Instead of doing nothing if we do something, this means, our mind will be controlled".

One day, I asked Rajesh about his future goals. He explained succinctly that he wanted to be the world's richest person. I ask how he intends to do that, and he explains that he wants to work in the stock market, and do to so he knew he had to learn basic computing skills, along with basic accounting software – which is why he found himself at CDS taking classes in Tally and typing. He names some of his ideals—Warren Buffet and Rakesh Jhunjhunwala of India. Jhunjhunwala also began his career as a Chartered Accountant, and went from there to become one of the most lucrative stock brokers in India, reaching the list of the world's billionaires. I ask how he learned about this and how this became his goal, and also ask about how he intends to learn more. He explains that after he completes his Chartered Accountant course and computer courses, he plans on taking courses specifically on the share market. He goes in to tell me about how he learned about the share market. The story he begins to tell me centers around buying and selling monkeys in the village:

> My faculty member told me one story about the share market. From that moment onwards I was attracted to the share market. Can I tell you that story?
>
> Suppose it's you and me; you are my friend and I come to your home town. I announce that if any person gets me one monkey, I will give them 100 rupees. After my announcement, one fellow came with monkey and gave me one monkey and I gave 100 rupees. After that he said to everyone in the village that this one person came from India, and if we give him one monkey he gives us 100 rupees. Then three people bring three

monkeys and I gave them 300 rupees, 100 each. After that total, means instead of doing that thing you are getting some 100 rupees because of bringing that one monkey.

So everyone gets enthusiastic about monkeys and money. So they go and collect the monkeys to give to me. Let's suppose in your home town there are 10 people. So ten monkeys. So ten monkeys bring and give me and I gave 100 rupees each totaling 1,000 rupees. Okay. After this ten monkeys are with me. After this there seem to be no more monkeys in your home town. After that I announce, okay!? If any person can bring me one monkey I will give 200 rupees. But, there are no monkeys all the monkeys are with me only!

I put monkeys with you, okay? I announce again that if any person gets a monkey I will give 200 rupees but monkeys are not there. I increase my prize. If any person gets monkey if any person get I will give 300rs but there are no monkeys like this I will increase the cost to 1,000rs if any person gives me one monkey I will give 1,000 rupees.

So right now, you have all the monkeys. You are my friend; you are my partner okay. One person with Kathryn. That person goes to your home; he gives me 1000 rupees and asks please give me monkeys. Then you ask him, okay, I will give you monkeys if you give me 900 rupees. This means he gets 1000rs, and keeps 100rs profit. Means Kathryn gives to 10 persons. Every person comes to your home, and knock on the door, and ask please give me monkeys okay, so you give 900rs so total 9,000rs for ten monkeys. They buy all the monkeys, ten monkeys, and after that you and I we shift to another village.

All the users, monkeys with them they don't use anything but we are having profit. 8,000 for 10. This is not gambling or this is not a fraud. This is a mind game.

The question is of when to purchase and when to buy. We must have patience and maintain patience. But people are enthusiastic about day-to-day profits. If they want, people can get reasonable profits buying and selling, buying and selling. So, we should have patience so we can raise and fluctuate the prices. This is the main concept involved in stock market. Means in one company prices are increased suddenly, decreased suddenly, increased suddenly, decreased means this is only concept.

After learning this example from my teacher, I invested in the share market. Because of we waited we have patience. Sometimes in ten days only I got 900rs without doing anything just patience and just using of mind. This is not a fraud, but people should do reasonable enquiry.

The share market and working in agriculture both carry substantial risk. Rajesh's belief in the power of the share market to make money shows his belief in the rational workings of the financial share market. In Cross' (Cross 2014) book on industrial projects and SEZ's in India, he shows how the "dreamed-of and anticipated futures are what engender or renew commitments to

capitalist political economy" (8). Miyazaki's (2013) ethnography on investment bankers in Japan show how the anticipated future dream is what propels the compulsion to work in the present. In this way, belief in the capitalist logic of the futures market instills subjects with the neoliberal self-responsibilization to keep working. Read in this way, his story of the monkeys is also a validation for why he has come to the city, taken computer classes, and is working studiously around the clock to pursue to a job in accounting. We can also surmise, through his story, that he will remain committed to working (in the present) in pursuit of an easier-to-come-by gain. Cross (2014) shows how industrial SEZs in India are "promissory infrastructure", both "material and symbolic" – here I would like to extend this thought process to the computer-training centers (9). While interviewing Rajesh about the computer-training center and why he's come to take classes, this story distills the fact that these computer-training centers symbolize a particular anticipated Indian future, embodied in its walls of computer desktops. The computer becomes a prosthetic appendage for students staking their claim in this anticipated neoliberal Indian future: and in turn this is the Indian states developmental strategy.

In Ho's (2009) ethnography of wall street, she cogently shows how the market is socially constructed. In Ho's (2009) ethnography, she shows how the culture of elite, wealthy, and powerful is produced through working in the finance industry, making it hard to imagine a failed career in this field. Ho also shows how risk is mitigated as the government regularly bails out large financial corporations – however, the government doesn't (as we've seen) bail out individuals. They share a common value in keeping money in the stock market as the best way to make money. This belief in the share market is new to India. Many Indians, as was made evident when Modi cancelled 500 and 1,000 rupee notes in 2016 in the name of corruption, keep their

money in cash or gold (Iyengar 2016). This stems from a belief that it is more stable than the share market and a lack of trust and experience with banking institutions.

While the share market ideology looms large today, the risks of producing wealth via agriculture are far too well known. Particularly after having his father pass away, Rajesh thinks that the risk of owning land is too high with unpredictable rains and increasingly hot summers. Rajesh, in talking about his parents' management of the land prior to selling it, faults them for not using the most updated technologies to sow, till, and harvest the land. He didn't say so, but he hinted towards stating a thesis about how if his parents had employed these technologies perhaps their fate would be different. Evident from the story above, Rajesh understands that working in the share market is not without its risks, and not a quick path to money. It is something that takes patience, as he says, and the ability to not sell and buy every day.

In telling me the monkey story, I think Rajesh is telling me how he's planned his future: he will use technologies that his parents did not—learning computers and accounting, keeping his money in a bank, entering the stock market—and that it is because of not utilizing these tools that his parents failed to make enough money. This is the prosthetic embodiment of the material computers – attached to him they imbue him with the ability to navigate a different future than his parents. He faults the technologies they had, that of small farm tools, the knowledge of the village, the sun, and the rain. He's aware that the stock market is not an exact exchange; you can't count on a precise amount based on whatever you put in. But he thinks gambling with the risks of the stock market are more promising than gambling with the sun and the rain each year. Rajesh's story of the stock market places computerized financial systems as one of the computers, and this is in opposition to other technologies (in his case, agricultural). In telling his story of the monkeys he is also telling me that computers, and their various guises, still do not

bare the tarnish of worn, everyday objects. They're a bit complicated. They need analogies: anyone can easily understand an analogy of monkeys in a village.

Srija

Srija had recently completed her MBA near her village in Andhra Pradesh and arrived in Hyderabad to do the training course. Her family's village was near Guntur, not far from the to-be new capital of the new state of Andhra Pradesh—Vijawada. She explained, however, that in Guntur they did not identify as coastal Andhras, it is situated on on the plains some forty kilometers away from the coast. Guntur is known for its chilis, and chili exports are a big business in Guntur. Srija's father worked in the chili business and sold *mirchi pickles*, or chili pickles.

I was curious about the prevalence of students not being able to get jobs even after post-graduate training. I asked her how many students from her MBA class got jobs after graduation. She responded:

> Two people got jobs. One person who took marketing classes got a marketing jobs. One member did B.Tech and after B.Tech joined MBA. Because of his B.Tech experience on his resume he got one job in a software company. And girls are married. Many are not doing job.

She continued to explain that when she first got to the city she went straight ahead and applied for a job. She showed her degree (college) certificate and MBA certificate, but they responded and said "you complete a computer course, bring the certificate, and then come meet me again". She explained that they wanted to see that you finished the full course. We were having this conversation at the end of the course, and her plan at the time was to secure the completed certificate on Friday and on Monday return to the company to join them. This company is not where Srija ended up landing a job, but it is exemplary of the attitudes of many employers in the

city where, regardless of academic qualifications, one is considered unemployable without a discrete technical skill.

Based on her statement on how women go on to get married and not get jobs, I follow up and asked if she wants to get married. She responded firmly that yes, she will get married. She had negotiated with her father to wait until one year after working to fix the marriage. She explained that her mother and father agreed that was ok, and are now waiting.

> I think maybe I will be 27 or 28. That sounds about right. Our society demands that girls should marry and only the man in the family is expected to be the breadwinner. The girls usually don't do jobs—they are only keeping home and only doing home things. That is one I don't like about our culture. I want to do a job and I want to settle on my legs.....my own legs.

Srija had many relatives in the city, but she refused to visit or stay with any of them until she finished her computer-training course and secured a job. This is why she chose to stay in a hostel, rather than staying with relatives in the city, because she wanted to build her own confidence and not show up to her relatives' home until she is gainfully employed. "I don't want to go to their homes now. After I get a job I will go there and say "I got job" and then I will meet them. I told my mother that I would not visit their houses until I get a job". Her relatives are spread out throughout the city, mostly living in Kukatpally, SR Nagar, and Chandanagar—all areas where Andhra families have settled in the city. She also explained that the computer-training courses take so much time, that she didn't want to waste a lot of money and time on transportation. Her hostel is in the building behind Aditya Enclave, the building in Ameerpet where her training center is located.

A computer job?

A few months after applying for jobs without any luck, I was at Shaheen's house, helping

her prepare rice for that evening's dinner. Her son slept on the bed, which took up the whole apartment beyond the small wash room in the back and kitchen at the front. Shaheen, while stirring rice, told me how one day, when she was at the computer-training institute, she went in to speak with the head of the institute, Jahangir. As she entered the office to speak to him, one of the female teachers was leaving the office. Shaheen told me that out of the corner of her eye she caught glimpse of a condom. She tells me to keep quiet and not tell anyone, and then continues to rant: "So, tell me—is that what I have to do to get a job? Put my body at stake? I decided then and there that I have values, that I will not put my body at risk in order to get a computer job." I understand that she's insinuating that the female instructor, who is the same age as Shaheen, landed this job not through her qualifications and certificates, but rather by sleeping with the boss. This possibility had not crossed my mind, but Shaheen told me that this was a common topic of speculation amongst the women at the computer-training institutes. She said another told her that she waited outside the office for a long time when she had a scheduled meeting, and then when the door finally opened when she went in the office she saw a box of condoms.

The instructor was the most upwardly mobile woman there, teaching while pursuing her masters in computer science, and the way the story was told to me seemed to be asking me whether sleeping with men was necessary to be upwardly mobile, while at the same time taking a moral stance above this. Though I am fairly positive that this sexual encounter at the institute did not happen (mostly because the female instructor has a serious boyfriend she's trying to 'trick' her parents into arranging a marriage with him), I am not interested in the veracity of the statement. Instead, I want to ask what cultural work the rumor (or not) does.

Shaheen continued to tell me that she and her husband had heard stories of certain interviewers straight up ask women to sleep with them, and stressed that she didn't feel

comfortable at multiple interviews. “I always kept my husband outside on his bike the whole time, and left interviews if I felt uncomfortable". She went on in detail to describe one interview: she was alone in a large room with a man, who was conducting her interview. She reports that he kept asking her what she would *do for the job*, which she explained she at first didn’t understand, but then concluded that he was insinuating that she offer sexual favors. As Amrute (2015) argues, one of the changes since liberalization is that middle-classes have been able to increasingly retreat from public spaces. The IT office, and computer work, is viewed as ‘safe’ in that it takes place out of public purview, in a private and guarded cubicle. However, Patel (2010) demonstrates in work on women who work the night shift at call centers shows how the safety of women was *the* major concern of working women’s’ families. She shows how women were able to break cultural rules of safety because it was for a good job, yet even with this good job, women’s mobility was heavily policed. She argues that peoples’ major concern was not actually physical safety but instead protecting against what others will think of a woman who goes out at night (Patel 2010: 6). Therefore, lower-class and lower-middle-class women are policed in a double sense: both out of physical security concerns as well as by the concerns about public image.

Conclusion

Mol (2002) argues how the multiple is more than one but less than many. In this chapter I have both detailed the multiple divergent things that people take to be computers and shown how the logic of IT works to reinforce its power. Many of the students shared stories of the computer in opposition to the work their parents did. The computer and computerized financialization

carries its weight as an alternative to occupations such as farming and small food businesses, which for these students' parents were not very lucrative. Therefore, the stories my interlocutors tell are different than the dominant story of IT in India, but the dominant story of IT in India as promising an affluent future seeps in to many of the student's stories, constricting the possibilities of what the computer can be.

In this chapter I looked at the computer in practice. How students narrate the computer in practice is part of their everyday labor of aspiring: they work to incorporate the technology to their life and it in turn adds meaning to their work. In this chapter the computer becomes a prosthetic materiality – it adds onto the students, extending towards their desired futures. The computer acts as something to barter a marriage deal with, as a hedge against the dry farming fields, as a pocket-sized symbol of a good job. This chapter also demonstrates that as the computer is multiple so is the landscape of IT in India. The IT jobs my interlocutors are working in exist in every neighborhood, and often do not come with fancy perks. In focusing on the present, instead of what students are hoping for in the future, I see a multitude of possible futures for these students.

Relocating aspiration from the future to the present allows us to imagine alternate futures. However, my findings demonstrate that both education and technology are filled with duality: they simultaneously offer possibilities and policing. This doubleness of possibility and the policing of categories such as caste, gender, class, and religion in turn shows how technical labor markets demand certain forms of public presentation. In this chapter, I showed how part of this public presentation (and self-image making process of interlocutors) is working with a computer. I demonstrate that this work distances my interlocutors from other areas of work – laborers,

agricultural, small-business, and that this distancing is part of what is demanded of my interlocutors entering the technical labor market.

I now transition to *Part II* to look more at the embodied experiences and potential policing of technology.

Part Two: Policing

CHAPTER FIVE

Breastcream and *hijabis*: Muslim Speculative Modernity

"Kate, when are you next going to America? When you go, can you bring me back some breast cream?" Shaheen asks. We are sitting in her flat; the apartment is small – one main room, with a kitchenette in the front and washroom in the back. Shaheen is slim, with long wavy hair and sharp features. She is wearing a red and orange cotton *salwar kameez* (an outfit comprised of a long shirt, loose pants, and a scarf) and is sitting against bolsters on the bed. Rizwan, her two-year-old son, is running in and out of the monsoon rains, ignoring Shaheen's pleas to stay dry.

I am confused. Breast cream? I think for a moment and ask if she means nipple cream for breast-feeding. But she explains, no, not *that kind* of breast cream; the breast cream she is looking for enhances and enlarges breasts. "My friend said that she looked online and that in America you can find many good breast creams." I pulled out my phone and Googled "breast cream". Numerous herbal breast enhancement creams popped up. The most popular on Amazon was named "Bustbomb" which claims to help women "achieve a level of confidence that you never thought possible" (Amazon.com 2015).

Throughout my eighteen months of ethnographic research on basic computer education in Hyderabad, India, female students frequently wanted to talk about how to lose weight, stay fit, or sculpt the body. At first, I dismissed these questions and comments about the body and self-fashioning as irrelevant to my research. However, I came to understand the anxieties and desires as intimately intertwined with students' professional and personal aspirations, as well as the economic landscape in contemporary Hyderabad. Shaheen had heard from another woman at the computer training center, who saw advertisements on her phone, about the breast cream. For Shaheen, the longing for larger breasts I read as in part as sexual in wanting to feel desirable for

her husband (this was her second husband, after divorcing one who beat her), and she talked about wanting to look good for him on multiple occasions to me. Simultaneously, I read it as wanting to sculpt herself towards the more ideal female body type—Shaheen was what she considered too slim, and she often lamented the lack of full hair, hips, or breasts. Particularly at the moment that we had this discussion, a few weeks after receiving her certificate from SMART Centre and she was pondering entering public life as a working woman, I connect this ideal body image to technologies of the self that are in part sculpting her into a professional Indian woman.

In this chapter I draw on narratives from two young women – Nishaan and Shaheen. Nishaan and Shaheen live in a low-income and predominantly Muslim *basti*, or settlement. The *basti* sits in between the historic center of Hyderabad city and the new burgeoning neighborhood where large tech companies such as Google, Microsoft, Uber, and IBM have campuses. Many of the men in the neighborhood, including Nishaan's husband, worked as drivers for the auto-rickshaws that carry workers to and from the center of the city to the technology companies on the Outer Ring Road. This *basti* was about a mile down the road from the Smart Center training center, where they had both enrolled in classes.

In this chapter I think through about how embodied forms of gender play critical roles in lower-middle-class Muslim women's experience aspiring to find work while in and after a technology training program. I trace the historically specific articulations of gender, religion, and class in Hyderabad and show how it relates to their striving on the job market today. Following scholarship that views modernity in a non-teleological way, I show how these women are producing what it means to be modern in Hyderabad by drawing on multiple aesthetic rubrics. In the *Modern Girl Around the World project*, (Group et al. 2008), the authors show how women in the 1920s and 1930s redo their bodies to participate in the public sphere, and how women in

divergent spaces such as South Africa, India, and China are both influenced by Western advertisements, but also influenced by local rubrics of aesthetics. This leads them to develop the idea of "multidirectional citation" which they define as "the mutual, though asymmetrical, influences and circulations that produce common figurations and practices in multiple locations" (Group et al. 2008: loc. 107). Talukdar (2012) similarly shows how women in Delhi push back against the ideal of a skinny body:

> these findings suggest that the existing theoretical framework that modern women across the world (especially those in non-western contexts) are indiscreetly adopting the western bodily ideal that a women is "never thin enough" not only fails to capture complex negotiations of women but is insensitive to the fact that bodily practices are often caught up in satisfying and meeting competing cultural notions of ideal femininities (110).

Fernando (2014) similarly shows how Muslim French draw on both Islamic and secular-republic traditions and aesthetics to craft a novel mode of inhabiting contemporary French public and political engagement. All three of these examples make a point that a singular idea of a modern women refuses to recognize that there may be multiple ideal femininities that are equally contemporary or 'modern'.

In the *Modern Girl Around the World Project* (2008), the authors argue that the emergence of Modern Girls globally in the 1930s complicates notions of modernity's directionality (from West to East) and temporality (post-WWII) (Group et al. 2008: loc. 147). They show how locally specific political and economic processes effected the why and how of the emergence of Modern Girl's characteristics. In the interwar period, they identify the modern woman as a working woman, a sexual woman, a sartorial woman, and a fit woman. As Ramamurthy (2008) shows, these characteristics defined the modern girl of the 1920s and 1930s era Bombay film shows, and then with Indian independence came the image of the ideal Indian woman as one who were homemakers and primarily servers to the home and nation (loc. 3033).

Markers of a 'modern' women today are quite similar to that of the interwar period: a working woman who lives in the city, travels independently, marries later, takes care of her fitness and dresses according to the trends.

In this chapter I make an argument about specifically lower/lower middle-class minority aspiration in urban India. As minority women, Nishan and Shaheen are both plugged into different global circulations than the West—such as having family who works abroad in Qatar or Saudi Arabia—and are producing themselves as modern women in a moment when Hindutva politics are once again making a large imprint on everyday life in India. Being marked visually and by name as Muslim marks Shaheen and Nishaan as outside of the dominant ethnic and religious group in Hyderabad IT and politics as previously discussed, the Hindu Andhra community.

Part of the developmentalist logic (with technology education at the forefront) is that gender inequalities will be removed and that women, specifically, will have more equitable access to the public sphere, and, especially work. One thing that this chapter illustrates is that gender is not automatically removed in technology-centric labor markets, but rather can be heightened in them. The stories in this chapter are on the one hand, very old stories, and on the other hand, imbricated in the particular socio-political environment that Shaheen and Nishaan enter into trying to find jobs. How do these multiple, and at times seemingly contradictory aspirations for their bodies, have something to do with being professionalized? And how do women learn this? Their stories illustrate that there is not one universal ideal woman but rather that Shaheen and Nishaan inhabit varying senses of self.

As previously mentioned, scholarship on IT in India has been dominated by inquiries into the middle-class. One major theme in this literature is the expanding 'middle class' and its new

forms of leisure spending (Aaftaab 2012; Brosius 2010; Fernandes 2006). Baas (2015) building on Foucualt (1997) argues that the changing ideal body type in India marks not only an increased interest in health, but also "narrates a complex array of desires, expectations and anxieties of 'middle-class' life" (446). In this chapter I show how new forms of commodification and ideal body types are not only the purview of the so-called 'new middle class' with expendable income, but also employed as strategies by low-income women striving to attain entry-level work. To do so, I trace a shifting ideal female body type, the rise of the commodification of fitness, and cultural hegemony of work-place fashion.

In this chapter, I first return to the concept of aspiration and elaborate on it as embodied. Next, I give a brief history on gendered embodiment, modernity, and the economy in India. In this section I trace fitness, woman as image of the nation, global circulations, and mass mediation to argue that the body – for these women – has become a site for laboring towards work opportunities and is structured by the dominant IT economies today. Though these stories have commonly been marked as indicative of a post-liberalization India, I also point out that these stories are old and are only being made to appear new through a focus on IT and increased global circulations. I then move to the third part of this chapter, where I trace minority politics of dress amidst a Hindu-dominant public space, Hyderabad genealogies of Muslim fashion, and how the *burqa* and *hijab* are part of a class construction in Hyderabad. I conclude by looking at possible trajectories of dress and mobility for these women, tracing divergent global circulations.

Gendered Embodiment of the Economy in India

Fit Working Women

Shaheen and Nishaan are both in their early 20s, married, with two children each. They live in adjacent flats atop a single-family home in Tolichowki; a predominantly *sunni,* working-class neighborhood sandwiched between Film Nagar, an enclave where many Tollywood film stars, politicians, and successful businessmen live, and the flat stretch of land going out to the founding relic of the city, Golkonda Fort. The neighborhood also sits halfway between the 'Old City' and Hi-Tech city – the newer part of Hyderabad where the government set up special economic zones for IT companies starting in the mid-1990s. The growth of the area around Hi-Tech city in the last decade has been astounding, and many of the men in the neighborhood, including Nishaan's husband, found work as auto-rickshaw drivers along the outer ring road, taking people to work at the software companies, startups, and call centers.

I met Shaheen and Nishaan at Smart Center. They were both completing a three-month course on basic computer skills that included typing, Microsoft Office, and Powerpoint. Nishaan had seen an advertisement about the training center in the newspaper and asked Shaheen to join her in attending the course. Together they pitched the idea of attending the course to their husbands, suggesting that afterwards they would be able to contribute to the family income, incomes that were for both families irregular and frequently fell short of covering monthly expenditures (a sidenote: the *kirana* store on the corner of their block has a business doling out short-term loans to many families in the neighborhood). They both finished the standard 10th grade, and Shaheen completed two years of inter-college, the equivalent of 11th and 12th grades. Beyond that, neither had enrolled in college nor previously worked.

During one of my first weeks at Smart Center, I was sitting in on a class. When break time came, Nishaan turned to me and asked urgently, "Kate, I saw this machine on TV. The

machine makes all the fat go away. Should I buy it?" Without knowing exactly what to do, I asked "how much?" "4,000 rupees", she replied. I explained I didn't know much about it and didn't quite understand what it was but asked her to send me more information. At home that evening I looked at the machine. It was called the "Burn Extra Fat Morning Exercise Machine". The description claimed that the machine was based on the theory that a goldfish jiggles itself into leanness. The webpage described how to use the machine: you put in under your legs while still lying in in bed, plug it in, and relax while it jiggles and vibrates the fat away.

A few weeks later, I was at Nishaan's home for her son's birthday. She pulled out her wedding video and turned on the TV. We watched the tape for 45 minutes as Nishaan virtually introduced me to her extended family as they arrived at the wedding. Nishaan finally comes into view in the film, though it is hard to see her as the number of flower garlands piled high around her neck largely blocked her face and most of her upper body. At this point, Nishaan jumped up, stopped the tape, and asked me to come closer. Gesturing toward the TV, she said: "Look, that is me! Seven years back. I told you I used to be skinny! I was so thin – how can I get thin again?" At this point I realized why she had pulled out the wedding video: to show me how her body changed. What does it mean for Nishaan and Shaheen to value thinness and enhanced breasts? While on the one hand these are incredibly intimate yearnings – that of wanting to feel desirable and beautiful, on the other hand it must be seen in light of economic shifts in India.

Mother India and Plump Pockets

Scholars of the genealogy of the female body in India analyze it as symbolic of the larger community or nation. The affectionate and ubiquitous phrase for the nation, "Mother India", evokes images of women as caretakers of family, tradition, and nation. The woman's body has been repeatedly invoked as a site of contestation over issues such as dignity and publicity

(Hansen 2001; Jayawardena and De Alwis 1996; Robinson 2013; Tarlo 2001). Scholars also note how women embody the financial health of their families and the nation. For many years, plumpness in India symbolized wealth, though a host of scholars have noted a recent shift. The Delhi-based author Mohanty (2011) sums up the shift:

> Being fat mean[t] you are rich enough to afford a lot of food and to avoid physical labor. It mean[t] you are well-loved and cared for, and perhaps all this ultimately links fatness to happiness. And conversely, being thin has meant impoverished – economically, socially, cosmetically" (Mohanty 2011).

Shaheen and Nishaan's bodily aspirations represent a shift of the ideal Indian woman, both in terms of presentation and profession. Over time I came to understand what their professional ideal was: a working mother who went to an office, had a job that allowed some flexibility to cook for their families in the morning and, perhaps, come home a bit early to start dinner and take care of kids. And, in terms of ideal body type, as Shaheen once told me: "*itna moti nahin, itna patli nahin, bic men*" (not too fat, not too thin, in the middle).

While Nishaan and Shaheen were placing their hopes on securing a job through gaining fluency in skills such as typing, Excel, Powerpoint, and Microsoft Word, I would also argue that they instinctively knew that their physical appearances would impact whether or not they would find work. As I helped them search for jobs after the course, I realized that many job advertisements included implicit or explicit physical descriptions. Here is one such job description I found on *Babajob.com*, a popular job portal for entry-level workers in India. The job is for a receptionist for a real-estate office, one of the most sought after jobs for women I interacted with: "One should fulfill the below 3 criteria: 1) Fair and handsome female with average height 2) Good communication skills 3) Computer knowledge with MS Office tools" (Babajob.com, September 19th, 2015).

India on the Global Stage: Contemporary Ideal Woman

Contemporary images of the ideal woman should be also understood as representative of India's global economic standing. Recent scholars of South and Southeast Asia argue that the female body is compelled to stage a nation's economic connections and global standings (Gangoli 2012; Hoang 2015; Lukose 2009). The rise of the Indian women at international beauty pageants is one such example, with winning Indian women analogous to India's rising economic standing. As a side note, Lukose (2009) notes, critiquing the rise of beauty pageants is one odd place where both leftist feminists and the Hindu right agree). Similarly, it appears that real-estate offices also want to present an image of globality and beauty through their employees.

Scholars note how mass-mediation is a primary way subjects learn new ideal body types and forms of self-care. Gehlawat (2015) attributes the changing ideal body type in the 2000s in India, shifting from plump to more slender, to changing physiques of actors and actresses in Bollywood films. Specifically, he argues that Amir Khan's new six-pack and sculpted muscles in *Ghajini* (2005) inspired many new gym attendees. He argues that this film marks a departure from previous ideal body types, such as the 1970s actress Sridevi who was affectionately nicknamed "thunder thighs" (Gehelwat 2015; Mohanty 2011).

Tracing the genealogy of the ideal Indian woman we situate the body at the intersection of both nationalism and the emergence of a neoliberal market in India. Here I trace two parts of female bodies and ask how these become not only body parts symbolic of biological functions: that of birthing and breastfeeding; but also become sexualized and representative of a certain form and type of Indian. In her article on the wet sari in Bollywood films, Dwyer (2000) explains how there are different codes of erotics in India than in the west:

> The display of cleavage during the day may even be permissible in India, while the display of female legs is frowned upon, while in London the former would be seen as only appropriate for the young, and women still have to go to court to be able to wear trousers at work…Western clothes are seen as more figure revealing than the sari (147).

Furthermore, Dwyer argues that the figure of "full breasts and hips, with a small waist" in India follows Hindu female ideals, visible in carvings on temples (150). Post-liberalization, however, one can note a change in how this body type is read and it becomes increasingly sexualized. Dwyer (2000) notes in passing that the full-breasted figurine – an ideal figure inscribed in classical paintings does not share the same lineage with the Urdu (Muslim) literary tradition "where small-breasted woman are idealized" (150). Dwyer too notes that the ideal body in Hindi films overall has slimmed significantly since the 1990s (158).

Fehervary (2015), in her work on commodification of teeth in post-socialist Hungary, argues that the investment in straight, white teeth becomes a marker of class as a publicly-evident form of investment in the body-as-capital. However, she simultaneously argues against a simplistic notion of a uni-directional travel of associations, and, through showing how Hungarians still find the commodified white smile a cheesy Americanism, logics of local class hierarchies still hold. Similarly, Shaheen's wish for enhanced breast cream doesn't necessarily mean that she wishes to show off her breasts similar to either middle-class American or Bollywood cleavage. Her inquiry illustrates a more intimate body-sculpting, one which takes shape as she transforms her relationship with her husband by leaving the house daily and attending computer-training courses and also by airing her wishes to lead a public, income-earning life with him.

Beyond Bollywood, Baas (2015)[3] contends that other medias - such as advertisements for weight loss and gyms and magazines with advice about how to be fit – are critical in how individuals understand their bodies (Glassner 1988). The saturation of advertisements can at times be claustrophobic in Hyderabad today: ads appear on billboards, every level of multi-storied buildings, and the backs and sides of autos and busses. Today, many of these billboards highlight fitness gyms, weight-loss clinics, and laser and whitening centers.

Post-liberalization Fitness as Commodity

A growing body of scholarship on the rise of such services in India sees it as tied to recent neoliberal shifts towards fitness as a commodity (Baas 2015; Brosius 2010; Gehlawat 2015). According to a *Business Insider* article from January 2015, the "fitness industry [in India] accounts to over $24 billion franchise industry which is waiting to be expanded and exploited" (Kaushik 2015). Social theorists understand this rise as synchronous with a shift from physical labor to knowledge work economies. Social theorist Berardi (2009), building on Foucualt's idea of governmentality, argues that devoid of the demands of physical labor in knowledge work, bodies instead become sites for consumption that "we put [it] through the commercial circuits of fitness and sex" (192). While Berardi (2009) argues that this is a by-product of working in a 'cognitive' industry, Nishaan, however, is not taking an interest in fitness as a byproduct of knowledge work, but in pursuit of a computer job.

[3] Building on Glasser 1989.

Negotiating jobs, *pardah,* and the politics of dress

Minority Politics of Dress

About a month after completing the program at SMART, Shaheen called me excited about a job interview as a sales agent with a toothpaste company. She arranged to have her parents watch Rizwan for the day while she took the bus out to Hi-Tech City for the interview. Later that evening, I met up with her and her sister, eager to hear about how the interview went. She laughed: "You wouldn't believe it – they have to wear *pants-suit*! I asked if I could continue to wear my *burqa* but they said no, *pants-suit* are required. All sales agents have to wear red pants and a shirt with the company logo on it. It's really not fair, I should be able to wear whatever I want."

In thinking through constructions of the ideal Indian women and labor opportunities, particularly in the current political environment, one must also pay attention to the shapes and forms of continued social discrimination of minorities and low-caste students. Discrimination towards Muslims in employment, education, and housing arenas is both explicit and implicit in India. While I was pursuing fieldwork, in a widely circulated and shocking story, a young man in Mumbai received the following response on his application to a job: "We regret to inform you that we only hire non-Muslim candidates" (BBC 2015).

In another recent incident, a girl wearing a *burqa* was asked to leave a café in the upscale Jubilee Hills neighborhood (2014). Bobby, the café owner, was ridiculed for being anti-Muslim though he claimed the café has a Western clothing attire rule and that if she were wearing another traditional Indian outfit he would have said the same thing (eyewitnesses, however, said

other patrons wearing *salwar kameez* received no attention). Saba, the woman, argued back that she was wearing western clothes: she had on jeans and heels under her *burqa*. This example brings to light some of the debates over different forms of dress (religious and/or traditional) with 'modern' imports and byproducts of the knowledge working economy.

While these examples might be anomalies, there are myriad other ways in which workplaces discourage women – particularly those who keep *pardah* (Islamic gender separation and modesty) and wear a *burqa* – from even applying to a job. With an influx of chain stores to Hyderabad, many entry-level technical jobs such as a cashier at food and retail chains such as Max Retail and MacDonald's require that both men and women wear uniforms. And, while the *hijaab*, or headscarf, is widely allowed, a *burqa* is not. These politics of dress must be seen within the history of the IT sector in Hyderabad where one ethnic community has consolidated positions of power in governance, education, and industry. Though the certificate might give an image of women being able to participate and compete on the job market, in the back of their mind they certainly are aware of sartorial and name codes for communities and higher caste individuals, which make getting jobs easier, and these are things that are non-aspirational – not something one can work towards. In a different context working with Pakistani immigrants to Toronto, Ameeriar (2017) shows how, despite them being highly skilled, "they received a barrage of regulatory proscriptions aimed at the immigrant body" (2). She shows how, in classes pitched as employment placement classes, her interlocutors expected to receive information on how to apply their highly-skilled backgrounds, but were instead advised not to wear *hijab*. Papanek (1973) also shows how although the burqa allowed more mobility for lower-middle-class women, finding appropriate jobs for this class was difficult – service-level jobs often entailed interaction with members of the opposite sex in public. She gives the example of how

you must be higher educated to land appropriate jobs for communities keeping *pardah*, such as a job at a women's only college or, I would also say, a job at an elite technology company where you work behind a computer and desk.

A scholar writing on the politics of Islamic dress recently noted that the *burqa* is "perhaps the most politicized piece of dress in the world" (Leibold and Grose 2016). Particularly in the post-9/11 world, in the west Islamic veiling has come to bear symbolic weight. Debates around femininity, choice, agency, modernity, patriarchy and oppression circle around the *burqa*. Social scientists have served as vocal counter-points to these stereotypes. Notably, Mahmood's book *Politics of Piety* shows how Egyptian women choose to wear *burqa*, rather than as assumed wish on behalf of their husbands. Mahmood (2005) argues that this display of pious exteriority, for her interlocutors, is part of a strategy to bolster an internal piousness. Abu-Lughod's (2002) also shows through her interlocutors how the *burqa* serves as a mobile form of seclusion that enables agency to participate in the public sphere rather than foreclosing them. This runs counter to western ideas of veiled, Muslim women needing saving from seclusion. Other point out that to make such an argument about agency in many circumstances would not be the full truth – often times there is pressure from family, a faith leader, or the larger community to adhere to veiling. Most of my Muslim female interlocutors cited both when talking of the headscarf: they talked about how it enabled them to move freely in the city, but also stated frustrations with their father or husband instructing them to always where one. Like any other form of dress or self-expression, the *hijab* or *burqa* must be understood within a particular regional and class context. Feminist scholars have long written about women's bodies and clothing serve as markers of community boundaries, particularly in the making of a nation (Yuval-Davis 1997; Anthias and Yuval-Davis 1993).

In India, women have historically practiced veiling across regions, religions, tribes, and ethnicity. It is common, for example, for women to pull the end of the *sari* up and over their heads, or to wear the scarf of a *salwar kameez* to cover their heads. They outline how grammars of modesty differ between Hindu and Muslim, whereas the Hindu form of modesty rests on "wrapping, restraining, binding" the Muslim forms of modesty include loose covering of specific body parts (Osella & Osella 2007: 236). Because of this history, Osella & Osella (2007) argue that the rise in popularity of the *burqa* yields another interpretation; they refer to the 1970s/1980s as a reveiling or new veiling rather than speak of the veil 'arriving' to India. It certainly is, however, citational towards more global Islamic fashion. Another piece of this is probably the increased circulation of Islamic reformist revival from Saudi and the Gulf beginning in the 1990s (Fernando 2014; Hirschkind and Scott 2006). The influence of Saudi mullahs to Hyderabadi masjids was something that community and NGO leaders frequently commented to me about.

Hyderabadi Genealogies of Dress

Muslim women in Hyderabad have not always adhered to veiling, nor do all today. Looking at images from the ruling elite family, the Nizams, in Hyderabad over the course of the 20th century, women often wore skirts, a blouse, and a light scarf (if any) over their head. Since the 1980s scholars and locals have noticed a marked shift in style of Muslim dress. Hyderabadis have their own ways of remembering the history of this, with a few dominant theories that I heard over the course of doing research. The first common narrative starts with Hyderabadis migrating to the Gulf for contract work in the 1980s. In light of the political shifts in Hyderabad from Nizam rule to the nation-state of India, many Muslims previously employed by the Nizam

state lost their employment and struggled to regain employment in the city, economic opportunities in the Gulf offered an alternative (Leonard 2007). Often only men went abroad for work and they would return to Hyderabad each year with different styles of dress and accessories for gifts, and the story has it that they imported Gulf Muslim fashion, including the *burqa*. While other Hyderabadis disagree with this narrative, which I elaborate on below, it is still common practice in the Muslim community in Hyderabad to be citational towards fashion trends in Saudi and the Gulf states – when Shaheen's uncle send a shipment of gifts to Hyderabad she ordered a blue-stone embossed burqa to gift to me as a specifically Qatari burqa, a style that is difficult to get in Hyderabad stores. Nishaan, similarly, laid out a *dastarkhan*, or decorative floor cloth for eating, gifted from a family member who works in Saudi Arabia on the ground for festive occasions and large meals.

Other Hyderabadis disagree with this explanation of the rise of the *burqa* and give an alternate story. Zakia Sultana is a lady in her 80s who became a mentor during my time in Hyderabad served as a Professor of geography at Osmania University in the 1970s. When I ask Zakia about the change in dress, she looks at me, shakes her head in disagreement and says "No – it started much before migration to the Gulf. It began with the Iranian Revolution. No one on campus wore a head covering before the Revolution in 1979". This explanation signals Hyderabad's close connection to Iran. The Nizam family originally came from modern-day Iran and to this day there are family connections between Hyderabad and Iran. The Iran consulate was down the street from my apartment in Hyderabad on Imam Khomeini Road, a tribute to the founder of the Islamic Republic of Iran and leader of the Iran Revolution. Hyderabad as a city has a strong Shia community and many religious leaders in the city, including Zakia, had travelled to Iran multiple times. In contemporary Hyderabad, students frequently come from Iran

to Hyderabad for school. Zakia's contention of a noticeable shift in *hijabs* and *burqas* post the Iran revolution mark these circulations, perhaps particularly educational ones. It also signals

The third explanation I heard often in the neighborhood where Shaheen and Nishaan lived was that the rise in the *burqa* in the public sphere is really just the rise of women in the public sphere. Before, people said, women never left their homes and hence the appearance of *burqas* seems like it increased. A recent article on the rise of *burqas* in Hyderabad cites one main shopping area in the center of the city where the number of *burqa* shops since 2002 has risen from 20 to 80 and that popularity is only increasing (Baseerat 2010). However, locals interpreted this not as a rise in *burqas* but rather as a sign that more women are leaving the house for education and employment, which many interlocutors pointed out as a point of pride in the city. The rise in popularity in *burqas* in Hyderabad over the last three decades is probably a combination of these explanations.

Markers of class

Beyond the relationship between femininity, modesty, and the public my own research shows that class position greatly matters. Papanek (1973) traces how in the 1970s and 1980s in South Asia the burqa became a symbol in lower-middle-class urban South Asia of mimicking the upper-class urban families, as previously being able to invest in mobile forms of seclusion was a marker of the upper class. She argued that the "provision of symbolic shelter can be seen as an achievement on the part of the man whose earnings support the family" (1973: 322). While on the other hand, the upper classes – who historically observed *pardah*, increasingly began to discard it after increasing "contacts with modern education and wester life styles" (Papanek

1973: 292). One highly educated and wealthy Muslim woman I interviewed at the basic computer training practiced never covered her head. Sarah was a dentist and had attended medical school in Chennai. Her brother was a software engineer in Virginia, USA. However, one could still read her as Muslim – her name, style of dress, and holidays she celebrated communicated that. But her accent, short hair style, travels to the US, and jeans and kurta outfits communicated an upper-class background. Sarah came from an upper-middle class family – she lived in Begumpet in a large family home, was 27 and unmarried and receiving little pressure from her parents. This was common and many of the wealthier Muslim women I met in Hyderabad infrequently covered their head and if they did it was part of a fancier dress occasion like a wedding. Fernando (2014) explains how in France the headscarf has come to be assumed characteristics such as lack of education and a non-professional woman who stays at home, and although this association doesn't exactly translate to urban India today, there are hints towards what wearing the *burqa* reveals about someone's class background. The *burqa* in Hyderabad today is often read as a proxy for class: upper-class women who wear a headscarf often do so with stylish, colorful scarves that match their *salwar*. While people often talk of seeing women in *burqas* in the Old City, one of the poorest neighborhoods in the city.

Conclusion: Possible Futures

Shaheen's interview experience frustrated her and pushed her to reconsider her job opportunities. A few months later, Shaheen and her husband received news from an uncle in Qatar who was going to arrange for work for both of them in a company he worked at: Ahmed, her husband, was to drive trucks and was completing a heavy motor vehicle license in

Hyderabad. With Shaheen's typing and computer skills, her uncle seemed certain he could find a desk job for her. Shaheen explained the opportunity to me: "This will be better. I will be able to work, in peace, and wear my *burqa* to work. I can be in a back office, not needing to see customers or where a certain outfit. We can both work and ensure a better future for Rizwan". This job never ended up working out for Shaheen's family – after months of her husband applying for the driver's license (and the unfortunate falling prey to paying far more than necessary to a fake officer outside the government office) the uncle in Qatar stopped responding to their WhatsApp messages of phone calls. However, for the months that Shaheen and her husband were putting their energy towards this plan, it showed that she aspired to move abroad, and was attracted to a professional life in an environment where wearing a *burqa* was not a minority sartorial choice. Shaheen had also told the institute managers at Smart Center that she had found a job in Qatar, through family connections, and the institute managers and teachers gloated to current students that one of their previous students had found a job abroad. When the plan fell through, Shaheen was too embarrassed to return to the institute, admitting defeat, and talk with the placement officer about possible job opportunities.

The constellation of things that Shaheen and Nishaan are compelled to desire for and of their bodies at first glance represent seemingly contradictory things: not too thin, not too fat, attractive but not drawing attention. Based on her research with suburban Delhi women, Talukdar (2012) found that they that they only selectively embrace new ideas of wellbeing, fitness, and beauty from the west. She describes this as "speculative modernity" (2012: 112, 109). By speculative modernity, Talukdar (2012) pushes beyond ideas of "alternative modernity", where the dominant narrative of modern is to dress one particular way, to argue that her interlocutors both critique 'modern' and 'traditional' ideas about what to wear and ideal

femininities. Lukose (2009) warns against a simplistic understanding of Indian college students trying on, contesting, and playing with multiple different fashion influences (95). Lukose's (2009) and Talukdar's (2012) analyses are useful in thinking through the multiple influences young women in Hyderabad face and the ways in which their aspirations shift and change. Paying attention to Shaheen and Nishaan's questions, comments, and desires for the body opened a window into how Hyderabad's prominent economic flows situate women and their bodies in the intersection of multiple and shifting demands while they strategize their futures.

One day, after Shaheen had given up on the plan to go to Qatar, I visited her at home. On this day she had a smart phone: a Lenovo A6000. This was not her smart phone, but one that her brother had temporarily lent her; her brother worked at a mobile shop and every few months he would lend her a phone for a week or so. Typical of students I met, Shaheen's access to a smartphone and its attendant forms of capturing, sharing, and partaking in the circulation of media was fleeting. During this time period, she would go to the *kirana* store and buy a mobile data package – often the three days package for fifty-one rupees, or roughly equivalent to one dollar. Since her brother left the phone at their home a few days ago Shaheen and her husband had taken many photos. She sat me down to show me their selfies with their son, pictures from an event at their cousins home, and pictures she took from the balcony looking down on the street alley below.

Then she gets to a selfie of herself, Shaheen is wearing a collared button-down shirt with jeans, the shirt tucked into the jeans and the shirt's top buttons left loose, long wavy hair flowing over her shoulders. The bright spot of the phone's flash in the mirror. She chuckles and says: "jeans and shirt - kaise lag rahe hain?" *Jeans and shirt – how do they look on me?* I ask if she tried them on a store and snapped the photo, as I knew she didn't own any. She responded:

"nakko – husband ke kapre. Vo so raha tha / *No! – they are my husband's clothes. He was sleeping"*. A few days later, the pictures were cleared as she had to return the rental phone back to the mobile store.

The story of woman dressing in pants and button-down shirts (in contradiction to traditionally feminized pieces of clothing) is an old story. Wearing 'pants' has also come to symbolize domestic power (of the man) and western attire in India where most women dress in 'ethnic' outfits (the *salwar kameez* or *sari*). However, a simplistic reading of Shaheen as wanting to dress in 'western' attire would elide her aspirations to also don particular fashions from Qatar – by trying on and inhabiting these various sartorial make-ups, she is doing what the Indian Modern Girl did in the 1930s by "appropriating and reconfiguring elements from all over" (loc. 3008). In a moment of IT in Hyderabad where it simultaneously signals global circulations through globally-minded local companies and multi-national corporations who have set up in Hyderabad, along with the social dominance of Hindu, through both national Hindutva movement and local regional castes, these examples illustrate how although India is a secular democracy, to participate in technology-centric labor markets one must conform to a certain image. The irony in this is that the technology-centric MNCs who have set up in Hyderabad such as Microsoft, Google, and Facebook have leading diversity programs and strict rules across their international companies. At these extremely elite technology jobs you will find many women wearing *hijab* to office, and *hijabi* women are portrayed prominently on career advertisements from these companies. Once again, the cultural politics police the more vulnerable groups entering into basic service-level computer work: it singles out and polices lower-middle-class women.

Ameeriar (2017), in her work with Pakistani women in Toronto, argues that certain forms

of appearance and bodily comportment, are, contrary to Toronto's portrayed vision of a multicultural city, necessary to be fully included in the national public sphere. She shows how bodily comportment is one "signifiers of one's ability to participate in the modern project" (Ameeriar 2017: 17). If we apply this logic to Shaheen's story, wearing pants and a button-down shirt are necessary in order to be included in the echelons of Hyderabad's modern, technology-fluent citizens. The ephemerality of this photo of her in jeans and a collared shirt hints towards the different possible futures. If I had only paid attention to what she wore to job interviews, my analysis would miss out on this moment of play and desire, captured momentarily but then deleted and left only in memory. Paying attention to her aspiration in the making, we see that Shaheen is working towards crafting herself towards a future and in the present is trying on a variety of different makeups.

CHAPTER SIX

"Delete the app!" Computing Security

I was preparing coffee when my phone vibrated on the kitchen counter. I had received a group WhatsApp message forwarded from my friend Nirmala. The message said to beware of a mobile application "Namao App" and linked to a Youtube video. The Namao application claimed to enable a smartphone's camera to see through women's clothes. The message warned women to wear extra layers of clothes in case men had installed the app and could look through your clothes, and implored me to forward it along to more women.

I clicked on the link and watched the Youtube video. In the video, women walked down a street. Next, the screen panned to a man's phone held in the direction of passersby. The video zoomed in on the man's iPhone home screen then further zoomed into show the details of the app. Inside the app it displayed options titled "Him," "Her," and "Naked." In the video, the man's finger selected the "Naked" option and then held the phone camera up as passersby walked down the street: everyone now appeared to have no clothes on.

Nirmala is 31 years old and a longtime friend of mine in Hyderabad. She grew up on the edge of the city and runs a small-scale NGO in Hyderabad that focuses on adolescent girls' life education. Nirmala did not grow up wealthy, but was raised Christian and after she graduated with a college degree in Hyderabad a church in the UK, affiliated with her English Methodist Church in Hyderabad, funded her to receive a Master's degree in the UK. A few days after receiving this WhatsApp message, Nirmala and I were walking to grab an early morning cup of coffee at a new coffee shop that had opened near the housing colony where we both stayed.[4] I

[4] While I had attempted several different methods of tracing the virality of this text, as What'sApp is a private messaging service I have found no information. When I have mentioned this receiving this message to others who resided in India at the same time they recall seeing it.

had replied to the text expressing that I didn't think the mobile application was real and not to worry too much about it.

As we were walking to coffee she brought up the message, asking me why I doubted the application because she, and many of her friends, thought it was real. She received the message from numerous unconnected friends and colleagues, and it was a hot conversation topic among women that week. I explained that I had an initial hunch that if this were real I would have heard about it, and then I googled the application and found several articles debunking the viral app. I also explained that I had asked my husband, a medical doctor working in medical technology, about it – he said he knew that people had been trying to develop x-ray technology for mobile phones but that the technology did not yet exist. Further, if the x-ray technology did work it would see through clothes and flesh to display bone structure, but little more. The video linked in the message, I proposed, was probably digitally manipulated to show breasts and stomachs beneath everyday clothes.

My explanation, however, did not ameliorate her anxiety about the mobile app. She asked: "But how do we know? With these new mobile phones, how can we know if they are watching us or listening to us? How do we know if we're safe to move around the city with these new technologies?" These anxieties are not new nor original – people globally share concerns with computers' agentive possibilities to intrude on individuals' lives (Reed 2000). On the other hand, Nirmala's anxiety about moving securely through the city, and about the possibility of digital photo of her in her undergarments circulating online, was rooted in place and socially contingent circumstances. [5] New technologies engage in new forms of cultural work that work to control female mobility and sexuality. This expands on and complicates the discussion on the

[5] I have found that there are many other similar mobile applications.

politics of clothing and its social role from the previous chapter, as these modes of policing mobility and sexuality clearly cross religious community and class lines.

In this chapter, I analyze how the Internet offers new ways to socialize, labor, and learn while on the other hand it renders users (and particularly women) vulnerable to new threats that may directly thwart such opportunities. This chapter rests on multiple narratives of experiences and/or concerns about the ability of mobile phones to harm a woman's reputation, potentially leading to physical or psychological harm. I argue that concerns about gendered security point towards the unstable and uncertain effects of new technologies. I draw on Caduff's (2012) statement that the "semiotic logic of iterability" is a constituent part of security (341). Iterability marks both the repetition of something and the change that accompanies a thing over time. Caduff (2012) observes that this "logic of iterability" marks scientific and technological change as double-sided: on the one hand, it is enabling and on the other hand it is disabling. For example, while 'the Internet' can offer new ways to connect with people and learn, it also presents new gendered security concerns. Through tracing cybersecurity and rumor in India, I show how this iterability works and how it is central to theorizing at the intersection of security, new technologies, and gender in contemporary South Asia. This iterability points towards the alternate futures made possible by shifting an emphasis on aspiration from an already-arrived-at future to the work done in the present moment.

Throughout this chapter I use the term gendered cybersecurity. By gendered cybersecurity I merge an analysis of cybersecurity with the discussion on everyday gendered violence and power. Ericksen et. al (2010) argue that anthropologists' role in understanding security should be to critique "the discourses and practices through which it becomes naturalized" (2). Of course, gendered issues of security do not arise only in new technologies –

anthropologists of security have articulated specific gendered concerns in a wide array of security realms such as border crossings, warfare, and refugee camps (Feldman 2015; Maguire, Frois, and Zurawski 2014). However, scholarship at the intersection of security and new technologies have too often left analyses such as race, gender, and power out of the center. Related to this work is a large body of scholarship on gender and minorities and violence the Internet including work on digital misogyny (Jane 2017), trolling & hate crimes (Citron 2014), anti-feminist digital activism (Massanari 2015) and race and gender (Daniels 2009). While most scholarship on forms of digital discrimination and violence centers on the United State, this chapter expands this literature to the South Asian context. The South Asian context has different histories around gendered violence (and different things are at stake), which must be taken into account when analyzing cybercrimes in India.

Further, I operationalize the concept of virality, building on scholarship on rumor in South Asia. to bolster my understanding of the semiotic workings of security, particularly with new technologies and young women who are recent adoptees. To do this, I connect a study of virality (whose home has been Internet studies and STS scholars) with the scholarship on how rumor operates in a specific culture (South Asia). Here I take up Das's (2006) idea of a grammar of rumor to talk about how it links up with the unconscious grammar of fear that the women use in how they talk to you about their experiences—in doing this I connect the two frameworks of rumor and security with embodiment.

This enables me to do two things: 1) point out the physicality of fear that can be the outcome of rumors and 2) bring embodiment into the discussion of technologies that are lauded by enabling social interaction to happen devoid of the bodies-in-present. Next, I trace the emergence of cyberstalking as a gender-based form of cybersecurity. Here I look at recent cases

in India as well as scholarship on cyberstalking, which is mostly based on the United States. Following, I discuss the attempts of policing (preventing and prosecuting) cybersecurity in India and argue that the police response is rooted in patriarchal social norms. I conclude with thinking about the more intimate spaces of cyber surveillance and how rumor works to maintain patriarchal social norms in households.

Theorizing Security

Uncertainty and Iterability

Recent anthropological works on security and science (Caduff 2012, Lowe 2010, Gusterson 2005) point out how speculation and uncertainty are constitutive elements of issues involving security and scientific advancements. Caduff (2012) notes that "at the center of this emerging apparatus of security is a particular concern, namely, the concern over the possible misappropriation of scientific information" (340). This points towards the ever-present possibility of new technologies producing unwanted effects (such as cameras peering down clothes). I find this scholarship useful in laying out how new technologies are always simultaneously the promised future and the bearer of not-yet-known consequences. For the development of a vaccine (Caduff 2012 and Lowe 2010) this fear is that the vaccine could either stop deadly viruses or be fodder for biological terrorism. In my fieldwork, one of the ways I saw this manifest was as the cellphone could either be a pathway to new job possibilities or the downfall of a social reputation if a photo gets circulated. It is precisely the circulation which opens up possibilities of policing and control; in the example of Shaheen's selfie in jeans and a

button-down shirt, from the last chapter, the photo served as an intimate, ephemeral, trying-on of something different. This photo was soon deleted, and therefore, removed from the possibility of circulation or iteration. That photo, then, perhaps signaled opportunity rather than policing.

What I demonstrate in this chapter is the shifting significance, or iterability, of the Internet/cell phones as they simultaneously hold the potential to connect people and the potential to incite fear—and that this fear can have material, embodied consequences. In writing on the development of vaccines and the fear built around it, Lowe (2010) says that "so much of the activity around the disease was designed to forestall something that turned out only to ever have existed as potentiality" (627). This potentiality, though it may never materialize, does not diminish the cultural work that it does by circulating as a potentiality.

Body as Information

Another important aspect of security I want to point out is how the materiality of bodies shapeshift with new technologies, pointing towards a semiotic shift. This, in turn, has consequences for the policing and surveillance of bodies. Caduff (2012), building on Haraway (1989) argues that the body—in these new technologies—is perhaps as meaningful in a semiotic sense than a biological one. "bodies have increasingly begun to circulate in informational forms, rather than corporeal ones" (1991: 343). This is related to my argument in this chapter because for my interlocutors in this chapter the representation (picture, voice over phone, etc) of the biological body via new technologies is becoming as important to protect and secure as one's physical body. However, as I will also show, things happening to the immaterial body-in-circulation can have very real effects on the material body.

On Rumor

South Asia: Rumor and Violence

In the last thirty years, many scholars have written on the relationship between rumor and violence in South Asia. Guha's (1999) work on anti-colonial peasant uprisings in the Himalayan foothills analyzed rumor as an avenue for mobilizing crowds against a moral wrong and inspired a crowd to rectify that wrong. Other scholars identify rumor as instigating violence. Veena Das (2006) writes on rumor in her excavation of what happened with the Sikh violence in Delhi post-Indira Gandhi's assassination (Das and Cavell 2006). Hansen (2004), in his book on communal riots[6] in Bombay in the early 1990s, identifies rumor as a primary mode of instigation of violence targeting the Muslim community, built upon a state-based political party which crafted a narrative of outsiders taking over the state and called for a show of Hindu masculinity and power in response. Pandey (2002) also identifies rumor as a major force in the violence surrounding Partition. In the last few years, rumors spread over social media such as WhatsApp and Facebook have been faulted as the catalysts for anti-Muslim violence in Burma, India, and Sri Lanka (Goel, Kumar, and Frenkel 2018).

Rumor's Grammar

[6] The term communal in South Asia refers to something happening between communities: it most often is used to refer to inter-religious relations (in this case the Hindu and Muslim communities).

Das (2006) asserts that rumor works to "build a structure of thought" within which something will be understood, and that this has "characteristics similar to that of paranoia" (Das 2006: 13). She says that rumors work to build "unconscious grammar" that people read their experiences upon (Das 2006: 117). Bhabha (1994) returning to Guha's examples of rumor in the early anti-colonial movements, identifies the temporal work that rumor does – which coincide with security.

> Whether we take [it] as historical 'myth' or treat them as rumor, they represent the emergence of a form of social temporality that is iterative and indeterminate…The indeterminacy of rumor constitutes its importance as a social discourse. Its intersubjective, communal adhesiveness lies in its enunciative aspect. Its performative power of circulation results in the contagious spreading" (286).

Beyond South Asia, other anthropologists have called for attention to rumor and pointed out that it must be analyzed in its environment and that scholars should heed the truth within the rumor (Schepter-Hughes 2002, Gusterson 2016, Kroeger 2003). Gusterson (2016), reflecting on the Pizzagate rumor where some people believed that presidential candidate Hilary Clinton was running a child-smuggling circuit out of a Washington D.C. pizzeria, points out how anthropologists are useful in understanding the meaning of rumors. While false, he says that we must be attentive to "the power such falsehoods can have" and that the Internet is "a perfect environment for the incubation and rapid dissemination of such rumors" (Gusterson, Sapien). Related to rumors, McGranahan (2017). writes on how an anthropology of lies can help us understand Trump's lies and the community buying into them; she points out that rumor and lies both operate in such a way that "fear drives action" (4). This fear and attendant action (such as wearing more clothes) illustrates how rumors over social media can control bodies. In the next section, I turn to look at cyberstalking. Here, I show how the fear created by rumors and/or cyberstalking has real material and physical consequences.

Tracing Cyberstalking

New old crime?

Cybercrime has recently gained prominence of one of the most pressing global issues. Halder & Jaishanker (2011) list the variety of activities that fall under cybercrime. The list includes identify theft, circulating fake documents, sending unwanted messages, obscenity, or cyber-terrorism. In 2015 when the UN ran its convention on crime and justice it emphasized that vulnerable groups are the most likely victims of cybercrime. Women, the UN has found, are 9 out of 10 times the victim of cyberstalking and relationship crimes online (2015).

An August 2016 article interviewing the Hyderabad city police cites a sharp rise in the "number of cases in cyber stalking, abusive e-mails, SMS and phone calls, and Facebook related crimes this year" (DC 2016). In most cases, the victims were young women and the perpetrators their acquaintances or ex-boyfriends. Inspector Mohammed Riyazuddin—with whom I met while visiting the station's cybercrime portal—states that in most cases, the victims were young women, and the perpetrators their acquaintances (or ex-boyfriends). Other times, he noted, the perpetrators include the woman's mobile number on the post, at times going as far as suggesting that they are 'call girls'. While this follows a pattern of gendered crimes (cyber or otherwise), it also poses new complexities in defining and prosecuting perpetrators of gender-based threats and violence.

The term cyberstalking refers to any digital activities that affect women's lives in a negative way. Mayankh Labh, an Indian lawyer who specializes in cybercrime, explains that

cyberstalking refers to the "persistence use of the Internet, email, social network, instant messenger, or related digital devices to irritate, badger, or threaten women" (2015: http://blog.ipleaders.in/file-complaint-cyber-stalking-india/). Although cybercrime laws were enacted in India in 2000, only last year was the first cyberstalking case closed (cite). In this case, a man in his 30s began cyberstalking one of his co-workers after she turned down his invitation for a date. Post rejection, he created a new email address and proceeded to stalk her through this email account. She soon went to the police station and filed a report; the police tracked his IP address and arrested him within a month. Several other high profile cases on cyberstalking were never closed, mainly attributed to uncertainty in new laws and difficulty in tracing abusers online.

Doubleness of Cyberstalking

Not all cyberstalking, however, should be seen as violent or policing. Marwick points out that 'Facebook stalking' in American popular culture has come to mean spending time observing, staring at, and watching someone they know on Facebook. The term has been picked up on Urban Dictionary and is used colloquially. This is usually – as she points out – reciprocal, as in most young people they talked to had participated in this and accepted that others would do it to them. This is vastly different from the cyberstalking discussed in Indian popular media, which usually means a more serious form of online harassment. Marwick (2011) is aware that she is speaking mostly of participants in "highly technologically mediated societies" (382). Marwick argues that while this is a form of surveillance, the surveillance is markedly different from prior theorizations of top-down, bureaucratic surveillance: here, socially connected people

practice reciprocal 'surveillance' on one another. This surveillance is more mundane, and could be understood as checking each other out, or as an expression of desire to meet or talk with people online that are not possible to in real life.

However, Marwick and boyd (2010) do heed to the fact that embedded in these social relations are differential power dynamics. They articulate the "context collapse" which happens on social media sites, where everyone is considered a friend (Marwick 2011: 379). What they mean by this is that in everyday life people have act and share information differently depending on the power dynamic; for example, one might share information with a close, trusted friend and not want that information shared with a parent or boss. "The re-emergence of clearly hierarchical social roles such as employer or parent demonstrates that power exists and is reinforced even when technology attempts to categories all connections within the category of "friends" (Marwick 2011: 380, building on boyd 2006). While the example of the mobile application perhaps leads to some unfounded fears, it is based on real experiences. Many women I spoke with had personal experiences with cyber harassment of some form, or had heard about it through a friend or family member.

Sam lived in a flat nearby the SMART Centre institute, opposite the main street with the neighborhood's central *masjid*, in Asifnagar, an adjacent neighborhood to Mehdipatnam. As previously mentioned, a few years' prior, Zainab had been a student at a similar institute down the street, but was a newly hired computer instructor when I arrived. Zainab was born in Saudi Arabia and lived her first many years there, until her father lost his employment contract and the family suddenly ended up back in Hyderabad. At that time, Zainab was seven years old and remembers the sudden poverty her family landed in upon returning to Hyderabad – her family had lived in employer sponsored housing in Saudi, which was clean. Her first memories of the

small room her parents, two sisters, and two brothers resided in upon their return was full of rats in the night and strings of meals of only rice. Her father had expected to be able to save more while in Saudi – probably most based on the experience of Zainab's *chacha*, or maternal uncle, who moved to Saudi Arabia from Hyderabad in the 1980s, was able to get a foothold into business, and started buying up apartments throughout the city of Hyderabad as an investment.

Zainab's uncle, however, had a soft spot for her (not so much for her other sisters) and helped pay for her school fees throughout. In intercollege – a two-year program prior to a Bachelor's Degree that is common in India, Zainab chose to go the track focused on computers. Once she began her bachelor's degree, she joined the computer training institute, as she said that although she was learning programming in school there was hardly any time to practice on computers.

The below is an excerpt from an interview with one young woman, Zainab. In this section of the interview, Zainab is explaining to me her first experiences on Facebook. What people expect and fear from engaging in cyber communication changes, demonstrating its iterability. In intercollege she learned about Facebook from her classmates who urged her to join. She said:

> Once I got admission to my graduation, then came the Facebook thing on. Facebook was very on much hype then during the duration between my intermediate and my graduation. So all my intermediate friends who I never used to talk in my class, I talk to everyone on Facebook.
>
> So, these people told me that, "you should have a Facebook account. Go try it for once". I did it myself again, for the first time. The moment I got into Facebook, I found all my old friends. The major thing that I did on Facebook was, [inaudible 00:19:48], reunion with my old friends. School friends and all that. We used to chat a lot on Facebook. Chat and then ... I was really excited to learn the Facebook language, what does this mean, this and that: 'lol', 'sos' ... What is all this? I didn't know. I didn't know what is 'rofl'. I didn't know, but then-

> They taught me 'rofl' means this. I mean, the moment I started chatting ... and I never used to talk, being a student of MS College where it's totally Muslim and all that, they never allowed us to interact with boys. So I met all my intermediate friends who were boys on Facebook. Then I used to chat with all restricted people on Facebook. I chatted and then finally, when I stepped into graduation in my engineering, we used to share our notes on Facebook, important questions. I also was part of a group called C and C++. C and C ... I'm extremely sorry to say that being a software engineer, I was really poor at C and C++, so there was a group called C and C++ where people-
>
> So, it was a group called C and C++. People used to solve doubts, they'd put up new concepts in C and all that. I used to be a part of that. I used Facebook also for this thing ... groups and all that. We had a school group. I mean, alumni meet, kind of group. There we used to chat with our seniors to get tips, important questions about things.

Kate: You had your number on there?

> No, I didn't have my number, but there was one boy who was my friend in Deccan College also. I used to treat him like my brother. He was a very good boy. He had my number and people took my number from him. They displayed it on Facebook. Many things happened.

Kate: They sent it around Facebook?

> Kind of. If somebody put it up on their wall, the others ... I used to get so many blank calls. I blocked many. Many. There were few boys who were kind of trying to use my social profile in a different way. They were using my numbers, this and that. Many things

Zainab continued to explain the cultural meaning of a "blank call". On the one hand, a blank call signals a wish to receive a call-back, but has also become a way to harass women. This is a strategy that is very common in India, where many people do not have much expendable income and receiving calls on most mobile plans is free of charge (Donner 2007). Another contributor on Quora recommends getting "an authoritative male voice" on the line and something called "SMS Bomber" which delivers a deluge of SMS to the person bothering you (www.quora.com/How-should-girls-in-India-deal-with-calls-from-unkown-numbers).

In this example, Zainab found new ways to socialize and advance her education through connecting to people online, only to face a negative experience after which she left the C++ study group. Marwick (2012) states that "the use of social technologies is often described as

"democratizing" to suggest that greater access to social media breaks down traditional boundaries" (386). As we see with Zainab's example – this is true to begin with: she begins conversing with men that she did not/could not socialize with in offline life. But, then, the possibility of the technology being democratizing seems illusive and a sort of cruel joke – for the implications of using the technology bear down on her family.

Zainab retold this period to me in a hushed voice, explaining that the number of calls to her home by men greatly upset her father and word spread throughout her apartment building. She alluded to the fact that without her brother standing up for her and rectifying the situation, her chances for marriage proposals might have dwindled. Marwick (2012), along with other scholars, acknowledges that this process of 'democratization' is "severely limited by economics, citizenship, gender, censorship, and the same processes that limit participation offline" (386). The particular circumstances that Zainab was in illustrate these limitations. For Zainab's family, a lower-middle-class Muslim family with extended family who stand in the middle-class, marriage is of the utmost importance as it relieves the family from a financial burden of supporting her. Furthermore, a family's reputation and dignity depends on the ability of its women to marry into 'good' families and take up respectable roles as mothers and wives. Neighbors often serve as watch-keepers as well as arbiters of dignity and respectability, and rumor spreading throughout the apartment complex could have led to Zainab's name being black-listed in the wider community as a respectable choice for a marriage partner. However, it is also important to note that Zainab's brother used his social power as a male to push back against his father's patriarchy, and rectify Zainab's reputation. Zainab's first experience with Facebook illustrates how the social media site quickly iterated in the span of months—as

educational space, site for social interaction that was not appropriate in school itself, and site for harassment.

Policing Cybercrime

While Zainab, some years later, could talk quietly about getting through her period of cyber harassment, earlier this year, a young woman from the state of Tamil Nadu (neighboring Hyderabad) had her Facebook picture downloaded and manipulated to show her wearing skimpy clothes. The photo circulated online, and after reporting the case to the police and receiving little help, the young woman committed suicide (Singh 2016). The reasoning she gave for taking her own life was that she was sure her possibilities for marriage had ended and that as a result the reputation of her entire family was going to fall. The think tank Data & Society (2017) published a new study on digital harassment earlier this year. This was (like most others) was limited to subjects in the US. However, it found similar things to that which I've found in India. The study validated a gendered experience of harassment online, and found that "Getting harassed online has real-life consequences beyond feeling attacked. The researchers found that 43 percent of harassment victims changed their contact information and that 26 percent stopped using their social media account, cellphone, or the Internet altogether" (Atlantic article). This confirmed the 2014 Pew Research study on online harassment that found the same thing – both women and men face online harassment, but women face more severe forms of harassment.

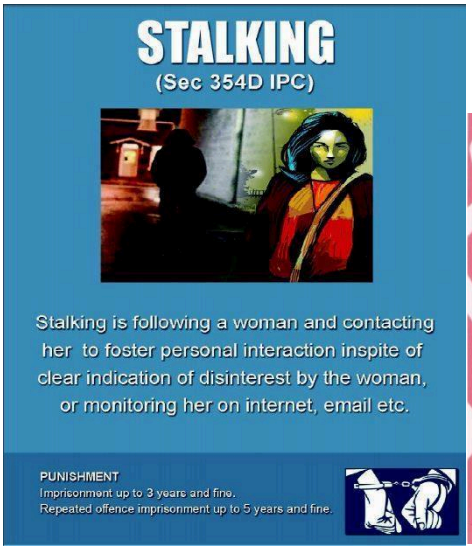
Given the seriousness of this gendered cyberstalking, many police groups – including Hyderabad city police – have opened units dedicated to cybercrimes. The Hyderabad police have also launched an extensive advertising campaign hoping to prevent cybercrime.

Figure 6.1 Cyber Crime Awareness Campaign

The above image is part of the "Cyber Crime Awareness Campaigns" that the Hyderabad City Police enacted to try to prevent cybercrime activities. As you can see in this picture, they are aware of gendered security issues in interacting on the Internet – the pictures show on the one hand a girl and a boy interacting via a computer screen, while the other shows a girl and a monster-like face. The tips given also point towards gendered concerns: "Don't share personal information irrespective of the genders as they may post abusive/indecent messages". This is probably hinting towards the knowledge of certain cases where men posed as women on social media accounts to facilitate conversation with young women, and then later blackmailed them.

This campaign is part of a larger Hyderabad City Police campaign to educate its constituents. The police are trying to reach different populations by posting paper flyers, as well

as creating WhatsApp numbers that facilitate as communication channels and using Twitter and Facebook to disseminate information. Below are some examples of what the Hyderabad Police are posting on social media sites:



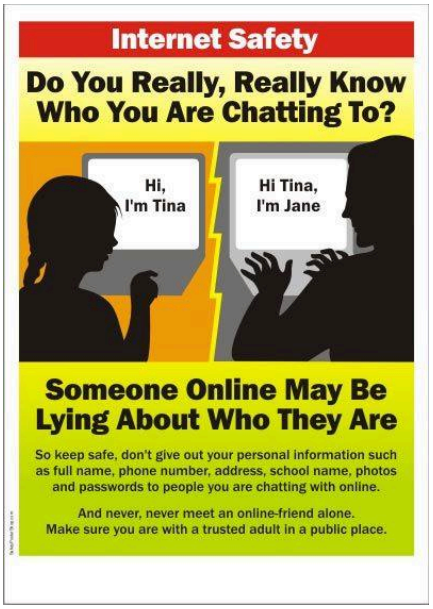


Figure 6.2 Hyderabad Police Facebook Postings on Cyberstalking

One day I visited the Hyderabad Cyber Crime Police Station at the suggestion of a few mentors in the city after receiving a barrage of unwanted and inappropriate text messages and phone calls from an acquaintance, one of the interlocutors I met at a computer-training institute. I

looked up the police station and found out information about it. Online it states that the "Cyber Crime" unit handles the following crimes: "Virus and Worm attack, Denial of Service attacks, Pornography, Forgery, Cyber Terrorism, Cyber Stalking, and E-mail related crimes" (http://www.hyderabadpolice.gov.in/Cybercrimes.html).

The Cyber Crime Police Station in Hyderabad is at the heart of the city, where the botanical gardens and major government offices are. A long boulevard of police stations lines the main street, and as we drove down we passed multiple different special police stations before finding the Cyber Crime Police Station. The Cyber Crime Police Station shares a courtyard with the Women Police Station, a section of the police station which handles gender-based violence. As I enter, I notice that those visiting the two police stations tend to be women who are covering up and wearing sunglasses, along with accompanying male partners and family members. I – too – realize that I am carrying myself in the same way, covering up, not wanting my eyes to be seen, and feeling full of nerves reporting a cyberstalking incident to the police. I, too, had a protective escort with my husband by my side.

We clarified which building the Cyber Crime office was in and made our way up the stairway to a small waiting area. In the waiting area, there were four simple office chairs. In the other two sat a young woman and man. The fan buzzed above and a *chaiwala* was delivering tea to the man at the desk taking in the requests from visitors. I explained why I was there, and was directed to wait in a seat.

About twenty minutes later an officer came to get me and ushered me into the room. The beginning of our conversation went something like this: I explained that I was receiving upwards of 30 phone calls from the same man in one day, from numerous different cell phone numbers. I described the threatening things he was saying to me: "I need to meet with you now." "Why are

you blocking my numbers" "How do I know that you are married". The officer listened and then responded: "Did you give your number to this man?" I explained that yes, as a researcher I had given out my number to several people (at least over 50) over the course of the last 15 months and that not one person had bothered me or repeatedly sent me inappropriate texts. He emphasized again: "The only people who should have your mobile number are your parents and husband. To no one else should you give this number". I continued to explain how this was not the issue but more importantly that I had an issue at hand now and wanted to know if there was anything I could do about it. I also explained that my intent in coming in was that mentors in the city had made clear that if this was happening to me, the young man was probably also doing it to several different people. In the end, he vowed to contact the man. This personal experience gave me insight into how – on a ground level – these complaints are taken by the legal personal. The police continue to reproduce patriarchal social norms and institutions through the guise of a Cybercrime department that claims to protect people, which I experienced first-hand after finding myself as part of the process.

Policing Young Muslim Men

As ISIS gained traction globally in 2014 and 2015, a number of news stories emerged that highlighted educated 'techies' being interpolated into ISIS from IT-centric cities such as Hyderabad and Bangalore. The news articles frequently narratively contrasted the educated 'techie' with the allure of going to fight for the Islamic State. One of the article's title shared a quote of the young man's father in Hyderabad: "We are religious but never communal…Atif was raised with so much discipline that he was scared to triple ride" (Pavan 2015). He went on to

explain how he, who never learned to read or write, fulfilled his goal of educating his children and sending Atif—the one who was lured to ISIS—to get his bachelors in technology. While most of the stories were about men, one infamous exception was the story about the Hyderabadi woman who was posing as "Nicky Joseph", the ISIS recruiter on Twitter and Facebook (PTI 2015). Newspaper articles also highlighted the Indian police and national security discussing the security risk and asking people to report anything suspicious, as well as an increased surveillance onto social media accounts. In 2016, the Hyderabad police reported a foiled ISIS attack on Hyderabad. The targeted locations were the IT zone of Hi-Tech City and a major mall in the neighborhood; the four men rounded up were Muslim men in their 20s and 30s, the majority of whom had completed engineering degrees in the city (Meet the Men Who "Plotted" ISIS Terror Attack in Hyderabad 2016). One was a graduate of one of the minority engineering and technology colleges in the city, while another held a certificate in 'computer applications'. Another is described as spending "a lot of time in front of a computer" (Meet the Men Who "Plotted" ISIS Terror Attack in Hyderabad 2016)

None of my interlocutors ever explicitly brought up these events with me in interviews. However, a few—both young Muslim men—brought up issues of discrimination while trying to make it in the tech industry. Javed's family had come from the state of Karnataka in the 1940s. He had graduated from college about two years ago, and lived in a nearby neighborhood to the center at Ameerpet. After discussing his family and educational background, he asked if I knew about MIM, the local Muslim political party. He lamented that with the rise of Modi, he felt that Muslims were not welcome in Hyderabad. He said he had heard that Amazon was the only tech company in Hyderabad that would hire Muslims. There, he said, the general manager was a Muslim. When he shared his fears about this, he had asked me to turn off my voice recorder

before asking me some more questions (I asked him if I could include in my report without taking notes, he said yes). Amidst the emergence of a new type of Muslim to be feared and policed in India—the educated Muslim techie—the gravity of his request to not be recorded illustrates how aware he is of the policing of Muslim men, and sharing fears about his employability based on his religious affiliation

Conclusion: Freedom from fear?

One day at SMART Center, I was eating lunch after the women's sessions in the morning. There was only a small common room at the institute, so we all brought our *tiffins* to the computer room and faced the chairs away from the lines of computer screens. The institute, like many in the neighborhood, has different schedules for men and women—and so right then there were only women eating lunch in the computer room. The room has open windows and across the street we watch construction workers bringing mud and stone repeatedly up the different levels as a new apartment comes to form. That day I was still finding my rhythm in the city for my research, and hadn't packed a lunch to eat at the institute. I forgot to pack a lunch, students are coming up and offering a roti, some chicken, or vegetable rice. The lunchtime serves as a time for students to connect and converse; although the students are young many are married and/or have demanding home lives and have little time to meet new peers, as their formal schooling has ended.

A group of three women opposite me was having a hushed but animated conversation – I playfully asked what the *gupshup* (conversation or gossip) was. Sania raised her voice to carry over the ambient noise of construction work and lunch conversations to ask if am familiar with

or use *phone cards*. I think for a minute and explain that *phone cards* to me means an international calling card, and yes – I used to use phone cards but now I usually use web-based callers, such as WhatsApp, Google Hangouts, or Skype. She looked confused and says I don't understand: "No, a *phone card* is something you can get that lists all of the calls you made in a month". She asks if my husband uses one, and then explains that she is concerned that her husband can request to see her phone card at work. "If he works at a mobile company, can he get the phone card and see all of the calls I make?" I explained that I don't know, and at this point other women have joined in the conversation. "*Haa, certainly. Vo subh dekh sakte hain*". *Voh mobile company me kaam karte hai, voh sub number dekh sakte hai. Patta hai*, *police subh mobile call sun sakte hain? Agar vo mobile company men kaam karta hai voh ek cd banakar sun sakte hai." /* Yes, certainly. He can see everything. He works at a mobile company, he can see all the numbers. Do you know, that the police can listen to all phone calls? If he works at a mobile company he can make a CD of all the calls.*"* Sania continues to explain she doesn't want her husband to see how frequently and for how long she calls her mother each day.

Sania's example is yet another of how patriarchy can be maintained and heightened, rather than alleviated, with access to new technologies. Sania's use of her mobile phone to call her mother is an example of technologies affording her to maintain a relationship with her birth family, one that in traditional South Asian understanding of marriage is cut off. Traditional understandings of marriage in India see the woman as having permanently left her birth family and joined her husband's family: Sania's concern about her husband finding out that she is confiding in her mother is probably a concern that her husband will assume she is complaining about her new family and life. In a broad sense, this is a concern about control and autonomy – where woman's access to mobile technologies has been lauded as giving woman more autonomy

and freedom to connect with people, here we see that logics of fear are at work that mitigate these potential opportunities. This can be read as part of the grammar of rumor that creates a viral sense of fear. We see here, though, that the rubric of gendered security issues not only lies in the Internet and ways of sharing information, but also lies in the ability of intimate violence and control to be carried out in similarly old yet new ways. In aspiring towards jobs, women spend time each day managing their technologies and the possible effects they may have in the world. Yet, we also see a group of women having this conversation about how to protect themselves from everyday surveillance while learning about how to use technologies.

International bodies, such as the UN, have adopted Amartya Sen's ideas that a freedom from fear is a constitutive part of human security (United Nations 2009). In this chapter, I demonstrated how new technologies may proliferate gendered security concerns and detail some of the labor—mental and physical—that goes into managing these concerns. These examples elucidate how two UNDP goals may at times be contradictory: on the one hand, the UN sees the Internet as a pathway to freedom while 2) they define security as freedom from fear. My interlocutors demonstrate that for vulnerable populations in contemporary urban India, it is vital to think through how access to new technologies presents both generative possibilities for alternate futures and opportunities for older forms of policing to take new forms.

CHAPTER SEVEN: CONCLUSION

Informing the future

In this dissertation so far I have tracked the labor of aspiring to work with computers for students in Hyderabad, India. In Chapter Two. I detailed the infrastructural background of the city of Hyderabad and the neighborhoods of Ameerpet and Mehdipatnam. I demonstrated how the material remnants of the neighborhood and education institutions in the city tell different stories about social power. In Chapter Three I turned to the space of the computer training institutes and show how students are both trained to be a certain way in the computer training institutes and how they become literate in navigating a bureaucratic and gendered society. I also show how students lay claim to the institutes and computer education as their own – through telling stories in the computer center, by taking beautiful notes, and by dreaming big.

In Chapter Four I showed how the computer in India is multiple in practice and how, for my interlocutors, the computer offers a viable alternative to previous generation's work. The computer in this chapter acts as a prosthetic materiality, symbolically adding to students' worth. In chapters five and six I detail the embodied, gendered experiences of going on the job market and navigating the Internet. I both show how women build craft non-linear modernities but also how social patriarchal norms can be heightened and expanded through digital technologies, leading women to self-police their movement in the city and actions online. In this concluding section I continue to explore the themes of contradictory opportunities and futures. I conclude by offering a potential direction to expand on the aspiration as labor in the present and also with some thoughts on improving the computer center's curriculum.

Carnival

Abdullah gestured to have me come sit next to him. I pulled up a chair and as he completed an online typing exercise he asked me to tell him about America. I asked where I should start, and he asked: “Do people speak Urdu in America?” I explained that lots of people speak Urdu in America. Most of these people, I told him, came from India or Pakistan or their parents did before them. He asked if he would get along fine in America if he spoke Urdu and little English. I asked if he was planning to go, and he responded that he had a job offer and that he was preparing to get a US Visa. Over the cacophony of the fan whirling and students typing on keyboards, I asked about his job offer. He said he, along with a friend from his college, had secured jobs working for a cruise ship company in Miami, Florida. The job letter was in his email –he said –and he offered to forward it to me. Knowing that English language is usually a pre-requisite for job offers in the US, I was a bit surprised at his job offer. As the teacher came in and started class, I jotted down my email address on a sheet of paper and asked Abdullah to forward me the job offer.

Carnival FUN JOBS

Carnival Cruise Lines®
3655 NW 87th Avenue Miami, FL 33178
Email: carnivaljoboffer@citynews.com

Tel: +1-949-2298-917

RE: OFFER LETTER

DATE: 10-01-2015

CONFIDENTIAL

We refer to your earlier forwarded application for job engagement with relations to Carnival Cruise Lines Project in UNITED STATES OF AMERICA.
JOB CODE: ***OUR REF: GRF/IB/VOL/05160/FIL0121/CARNIVAL***

1.0: Through the curriculum vitae/resume of contacted expatriates recommended for the project, Congratulation, you have been found qualified as one of the expatriates to resume work in office. The company has appointed you

as ***IT COMPUTER,OPE.*** please note that a copy of this mail has been forwarded to U.S High Commission in New Delhi India for immediate visa endorsement.

1. ***DATE OF RESUMPTION:*** You are requested to resume office on **(18/02/ 2015)**

1.0: ***JOB LOCATION:*** Carnival Cruise Lines, 3655 NW, 87TH AVENUE MIAMI FL33178, USA.

2.1: ***JOB TITLE: IT COMPUTER OPERATOR.***

NATURE OF JOB: This shall be communicated to you based on your level of experience on your present job and after we might have offered our professional training to you immediately you arrive.

3.0: ***WORK PERIODS:*** Monday to Fridays, Time: 9.30am to 5.30pm with break period between 12.30noon to 2.30pm. Expatriates are entitled to a one (1) month

Confidential Page 1

Figure 7.1 Carnival Cruise Line Job Offer

A few days later, the job offer arrived in my Gmail inbox. The offer was from Carnival Cruise Lines, headquartered in Miami, FL and dated January 10th, 2015—a week before I was looking at it. It stated that Abdullah's take home salary would be $8,500 USD per week, along with other benefits such as a paid cell phone plan and free rent. The offer letter also stipulated that Abdullah would be able to take (each year with two-months-notice) a one-month paid leave to return to India and spend time with family. This stipulation was specifically for expatriates accepting jobs in the US.

By this point, I was pretty sure that the job offer was fake. The deal sounded too good to be true – no one I knew received free rent as part of a salary package, and the salary amount was high. The graphics on the letter, the large confidential watermark, and the odd email address

"carnivaljoboffer@citynew.com" all signaled to me that the email was spam. That night, I looked up the company online and found a number of complaints about fake job offers for Carnival Cruise Lines on its Facebook page. I contacted Carnival Cruise Lines through its Facebook page to ask if it were a real job offer or not and received a reply from an employee the following day confirming that no, it was not, but that the company was aware of a number of schemes. On their website, I found the following statement:

> Fraudulent Employment Opportunities: We have been made aware of fraudulent entities around the world claiming to represent Carnival Cruise Lines as recruitment partners. We are working closely with our Security Services department and local authorities in various countries to prevent individuals from wrongly representing themselves as Carnival Cruise Lines recruitment partners. We strongly suggest that you only discuss employment opportunities with the agencies listed as our recruitment partners. If you have any suspicion on the nature of any ads or websites claiming to recruit on behalf of Carnival Cruise Lines, please contact the approved Carnival Cruise Lines agency located nearest to your place of residence. (http://www.cclcareers.com/Home/join-carnival/how-to-apply).

The following day I called Abdullah. I explained that that the email was 'spam' – a term he didn't understand. I attempted explaining what spam was in Urdu and again used the word "*naqli*" – a term that means counterfeit, fake, illegitimate. I also told him I had reached out to the company and they had confirmed it was fake. Abdullah thanked me for the information, but said that his friend also had a job offer and that they had been talking with the people in the Carnival office in Delhi. He reiterated that he held his degree in Computer Science and that the company was looking for Bs.C. students. Soon, he said, they were going to Delhi to process the visa to go to America.

Sp/cam

This could be read as two ways. The job offer came as an attachment to an email - marking it as spam: unsolicited electronic junk mail. Yet, spam also frequently appears as a

scam, an intentionally designed fraud. The scam that Abdullah entered by reading this job offer as real continued for months and exposed his family to very serious financial risk. This is an example of a scam that although appearing on new technologies is connected to older networks of labor circuits designed to extract work out of vulnerable people. Verma (2012) found ,in her research on Indian men working in oil fields in the American south, a number of legally legitimized labor circuits luring low-income South Asians to work in America that would be considered indentured labor based on hours worked and living conditions. As I dug in more I found that Carnival Cruise had a long history of exploitative labor practices. In "The Perfect Scam", the reporters detail meeting South Asian men who accepted jobs through Carnival cruise lines only to find that the jobs were back-breaking, 14-hour manual labor and cooking jobs, with no days off for months (Nielsen 2000). The room that they are given to sleep in is described as a "windowless cabin below the water level", with multiple men bunking in one room. In the year 2000, when the article aired, the pay these men were receiving equated $1.50 an hour, or far below federal minimum wage in the United States (Nelson 2000).. The men — from South Asia and sending their incomes back home — describe feeling stuck based on the image back home of what their work is. The expose found:

> Workers typically shell out hundreds of dollars before they can even start their cruise ship careers. Carnival has contracts with employment agencies around the world that charge new hires up to $1500 for job placement. In addition recruits must pay the equivalent of one-way airfare from their home country to the port of their assigned ships. A Paradise cook from India, who asked to remain anonymous, says he gave a Bombay agency $2000, which included airfare. That sum, much of which he borrowed from relatives, is almost a third of the $7000 he will make during his current ten-month contract. The man, who supports five people including his wife and four-year-old son, has not received a promotion in five years. (Carnival usually returns the agency payment and airfare after several years of service -- without interest -- workers report.)

I will never know the specific aims of the scam that enveloped Abdullah's life, or what would have happened if he made it to Florida. I only detail these possible trajectories in order to

highlight the financial risk that this email exposed Abdullah to and to highlight that the circuits of risk and exploitation are not new. Rather than prevent Abdullah from financial and personal risk, his technical education has exposed him to it, wrapped in new shiny packaging.

Digital Futures

Toward the end of my research, I went to meet the Information Technology Secretary of the new state of Telangana. I briefly met the IT secretary for two to three minutes before he rushed off to a meeting and encouraged me to continue the conversation with one of the officers on his team. She, he told me, had been operationalizing the office's many goals.

I took a seat in a metal chair opposite to Radha's glass-topped desk. The book the "Age of Distraction", a "Digital Telangana" coffee mug, and a large envelope (a wedding invitation) sat on her desk. A pink terry towel draped over her chair, to keep it clean, attached by office butterfly clips to the outside of her chair. On the wall a poster advertised a recent Telangana Digithon. The calendar diary book on her desk advertises the E-Governance award.

Our conversation focuses on the Digital Telangana campaign, which launched at the same time as the Digital India campaign (which I discussed in the introduction) just a few months prior in July 2015. I tell her of my research at the certificate centers and she stopped me mid-sentence: "But tell me, do you think typing is important?" She went on to explain that Digital Telangana aimed to move beyond such discrete technical skills such as typing in its education platform. She said:

> I am trying to work on focusing on creative learning and critical thinking instead of typing, Microsoft Office, etc. Instead, it will be called the TS (Telangana Skills) Class - it will be computer literacy plus skills. For example, how do you teach typing? We are going to be offering a course on how to make book labels. Through this they will have to learn

> typing, but also have to learn how to use paint, cropping, etc. They will build all these skills. At the end, on the platform they will upload an image.

She then described how the Telangana government was approaching building out this curriculum and distributing it to schools.

> Right now I have divided up schools (government schools in Hyderabad) to different companies and I will see which one works. After, we will be able to take the best elements from each one and put them together to create our own package.
> Integral to her image of the future TS Class was the education environment, what she referred to as the 'digital labs'. She describes these digital labs as educational spaces where people will be communicating digitally rather than person-to-person.
>
> They will only be able to communicate through the computer, not through talking to each other. For instance, if someone wants to get feedback on a label (from the book making course), he will put it up on the screen - this will appear on all of the screens in the computer lab. Since this is a virtual lab, students will all reply on the screen.

Radha concluded by saying that by being forced to communicate in the digital lab, these students will become familiar with digital communication. She pulled a business card out of a stack on her desk and handed it to me: "I just met with this company". The company's product, I learned, is a proprietary learning platform software package. It includes tests and personal analytics for each student. Another big part of the software is that it is collaborative - students can make notes on content and share it with their friends, similar to social media sharing. While Radha's wish to get away, as she says, from "infrastructure and device", is laudable there are other aspects of her approach that I find worrisome.

Part of the push for the creation of the state of Telangana, voted into effect in the summer of 2013, was to ensure a more equitable distribution of technology jobs and wealth between the Andhra and Telangana ethnic groups and regions. Since the Telangana government had gone into effect, in 2014, the government had very visibly focused on having both a 'hi-tech' form of governance—through e-government websites and mobile applications—as well as a visible

platform of enhancing Hyderabad as a center for IT. The government had announced the T-Hub, or Telangana's startup incubator, along with the plan to build more computer hardware in the state.

Radha's idea of a future technology classroom where students are not allowed to interact with each other face-to-face but only through a computer adheres to a discourse about technology that believes in its ability to erase difference and promote more equity. This is clearly stated through the office's goals: "to leverage Information Technology not only for effective and efficient governance, but also for sustainable economic development and inclusive social development" (http://www.telangana.gov.in/Departments/Information-Technology-Electronics-and-Communications). My interest in this dissertation has not been to enter into the old debate about whether technology is good or bad for the world. I align myself with Jackson's (2002) take on that sort of inquiry:

> But in focusing on how the effects of new technologies may be evaluated and managed, these debates often leave unexplored the more immediately empirical issue of how we actually experience and interact with technologies, and how our attitudes towards them are linked to the perennial human anxieties about the strange, the new, and the other (Jackson 2002: 33).

Rather, I am concerned that this discourse on technology elides the embodied experience that working with any technology entails. In this dissertation, I have demonstrated how embodied the experience of using new technologies is. The discourse on technology that views Information Technology as something to leverage for "sustainable economic development and inclusive social development" must also acknowledge the unequal distribution of power and the narratives that continue to produce this inequity. It must recognize that in addition to inching towards inclusivity, technologies can also be mobilized to promote exclusivity. I have touched on many such examples of this in this dissertation.

At the time of writing this conclusion, in March 2018, the government of Sri Lanka has halted access to the social media sites of Twitter and Facebook, in an effort to curb violence towards the Muslim minority (Goel, Kumar, and Frenkel 2018). This is at a time when the ability for people to use technologies and social media for harm is being widely recognized, while the discourse on technology for development hasn't shifted to accommodate. However, in Radha's description she envisions a utopian technical classroom where people communicate only through computers. Radha's utopian vision of a classroom where students communicate only online and not in person seems to wish to talk around the public presentation of difference that is very much a part of everyday life in Hyderabad.

Beyond Aspiration

Embedded in the discourses of both technology and education —which I've covered throughout this dissertation—is the idea that technical education will enable a rise in economic well-being. Throughout this dissertation, I suggest that technical education may, rather than promote more equity, may expose more vulnerable segments of society to increased risk. In this conclusion I also explicate how it can lead to financial risk. Throughout this dissertation I have detailed the everyday materialities and bodily comportment that make up aspiration. In Abdullah's story, he does many things that comprise his labor of aspiring: he asks for help to set up a Gmail account, he checks about the job offer with his community and an American who shows up at a typing center, he continues to attend classes at a typing center while plotting collecting money to follow the job offer, he approaches his family about money for the visa, he arranges travel to Delhi, he goes to Delhi to meet an agent, etc.

But, while there may be similar aspirational horizons to Chua's (2014), there is not a "problem of aspiration" as suicide is described in Kochi, Kerala in Hyderabad. During my research time there, in following students over a longitudinal period of time, I witnessed many 'failed' aspirations. However, the perception from the students was not of a 'failed' end of the road option but rather I witnessed a shifting of aspirations. While I have reoriented aspiration to focus on the labor in the present, the concept of aspiration is still always future-oriented. At times, I struggled with how to conceptualize students constantly changing articulations of the future.

Take Shaheen, who I mention earlier aspired to go to the Gulf and secure a secretary job. While she and her husband embarked on a similar journey as Abdullah - chasing a job opportunity, offered over a WhatsApp message, by her second cousin. The job opportunity was for her husband to serve as a truck driver for construction in Qatar. To do so, her cousin instructed them over small-sized messages, he would need a license in heavy-vehicle driving. This license required a training and number of witnessed hours driven.

When Shaheen and her husband went to pay for the license at the Hyderabad department of licensing, they were intercepted by an agent outside the building who charged an extra 5,000 rupees, or around $80 USD, to process the license. When she called me to ask to borrow money, I said I was surprised it would cost that much, and checked the website which warned in large letters in a moving banner at the top of the webpage: "DO NOT PAY AGENTS OUTSIDE OF THE OFFICE. GO INSIDE AND USE THE E-KIOSK". She didn't know. Her husband took the course, Shaheen told people at the training center that they were moving to the Gulf, people at the training center started telling people that someone who had trained there got a job abroad, and the second cousin dropped off of WhatsApp, his number unresponsive. The following month

when I stopped over to her house in the afternoon she was on the floor making a beautifully hand-crafted sign, which she intended to hang outside of her flat so that passersby could see, advertising her skills as a tutor: in both K-10 standard coursework and typing and Microsoft Word.

This is a short snapshot of Shaheen's life, but over the course of a year-and-a-half I witnessed her aspirations bounce all over the place: getting a job in Hi-Tech city, getting a job in an office, moving abroad to the Gulf, staying put and becoming a tutor, attending sewing lessons and picking up sewing projects on the side. To be clear – all of these strategies are aimed at upward economic mobility. But she didn't hold fidelity to any particular path towards that goal - and if I were to read her aspirations as set-in-stone her story would be one of a domino of failed aspirations. So, if aspiration is a moving target? What is a better approach?

One perspective may be to see these various aspirations as contradictions and to accept ambivalence in the present and future. Jovanovic (2016) suggests that anthropologists turn to study people's dispositions as a way of accepting contradictory information and uncertainty about the future. By this she means that researchers should pay attention "the ways in which people are oriented to things, people, and objects in regard to futures, which further shape people's everyday experiences, subjectivities, and selves. In practice, dispositions entail statements, propositions, utterances, behaviors, attitudes, emotions, and beliefs" (2). She argues that that anthropologists should pay attention to how these dispositions are multiple and contradicting in their outlook on the present and future, depending on when you ask them. A holistic view of peoples' oscillating optimism and pessimism may be understood as ambivalent. Lambek (2016) argues that operationalizing the concept of ambivalence may "see how people, who entered myriad contradictions, chose not only one or the other ("either"/"or") but how they

selected both ("both"/"and")" (7-8). The ideas of contradiction and ambivalence of the future and present both work around the paradigm of progress that aspiration sits within. This approach of ambivalence is also a useful framework in which to understand the two — appearing as contradictory — frames that make up this dissertation: that of possibility and policing. In this dissertation I focused on aspiration in the present, but the work that this is doing opens up the possibility of alternate futures and non-linear trajectories for my interlocutors. As we see here, Shaheen's trajectory has been anything but linear, but throughout she has found ways to find meaning and joy in her life, alongside disappointments. In the final section I turn to some suggestions on how to improve the computer training center curriculum, based on my the experiences of my interlocutors.

Information Literacy

I maintained my communication with Abdullah long after he left the computer institute to prepare for his journey to Delhi, for the American visa, and onwards to the US. I encouraged him not to give the officer in Delhi his family's 50,000 rupees (equivalent to a little less than $1000 USD), stating both the components of the email that made me nervous but also stating that I knew how the visa process to go to America worked and it wasn't necessary to pay your employer a fee to process. Abdullah, however, was set on following through. He collected money from his family and set a date to go to New Delhi. He took the cheapest train—a journey that takes 24 hours from Hyderabad—to meet at the Carnival Cruise line office in New Delhi. Upon returning, he phoned me to state that there is, indeed, a Carnival Cruise office in New Delhi. I maintained intermittent contact with Abdullah — at this point he was staying with his family in a village a few hours outside Hyderabad and wasn't coming to the institute any longer.

He would sent sporadic updates over WhatsApp. Some months later, I asked how the visa was coming along — he responded that it turned out to be false and that he fortunately got his money back.

Abdullah's story is just one of many examples in this dissertation that demonstrate why computer training centers should incorporate information literacy into their curriculum. Abdullah's sotry it sheds light on how both quality control and broader technical literacy skills are necessary to prevent technical training from exposing already vulnerable students to increased risk. His example challenges an overly simplistic presumed direct relationship between accessing the Internet, technical education, and upward economic mobility. India needs to expand its definition of technical literacy for the 21st century and work to regulate the curricula of the ubiquitous computer training centers if it wants to equalize opportunity for all.

The Mozilla foundation – a leading institute working on identifying and building a technical literacy curriculum – recently explored and proposed what should be considered for "21st century skills", that are necessary for success (Web Literacy - Mozilla Learning 2017). This foundation broke down the broad categories such as Web Literacy or Problem Solving into discrete skills. They have identified the abilities to evaluate material and protect oneself online as critical to these digital literacy skills, and they consider these skills part and parcel to online reading and communication. Mozilla Foundation's definition of web literacy focuses on reading and participating online, with an emphasis on evaluating and navigating. In this curriculum, they go over concepts such as the world wide web and the Internet, and importantly cover the various was of finding, saving, and disseminating information on the web. Other topics include privacy, online behavior, different websites to search, and how searching for something on a social media site such as Facebook is different from other websites.

Computer training centers should add in a module incorporating Mozilla's free Information Literacy curriculum. In addition, as this dissertation demonstrates, the narrow focus on desktop computer typing and software at many basic computer training institutes does not adequately prepare students for different forms of the computer. These courses should also include mobile literacy components. As India rests its hope on the adoption of new technologies for the future, a critical component of being able to navigate the future well will rest on information literacy.

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