A Woven Divide

Cotton, Property and Partition in the Indus River Basin

by
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presented to the University of Waterloo
in fulfillment of the
thesis requirement for the degree of
Master of Architecture

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Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis including any required final revisions as accepted by my examiners.
I understand that my thesis may be made electronically available to the public.

Abstract

In less than a hundred years of colonial occupation, almost all of South Asia's cotton species were erased. Where previously native communities had cultivated thousands of localized subspecies to foster unique properties, the British Empire imposed a single species of American cotton to meet their insatiable demand for textiles. My M.Arch research thesis examines cotton, in the context of South Asia, as a vessel for colonial extraction, environmental transformation, exploitation, and erasure. The displacement of Indigenous *'desi'* cotton and propagation of *'American'* cotton gave way to large scale environmental transformation, most notably the construction of the world's largest irrigation system, to date, across the Indus River Basin. As the irrigation network transformed the province of Punjab into an agricultural asset, colonial intervention erased its forest, wetland and pastural landscapes. Simultaneously, colonial processes of extraction and manufacturing rendered native cotton methods obsolete, resulting in the degradation of textile tradition and the disappearance of native spaces of production such as *kharkhanas*.

With my research, I aim to create spatial documentation of cotton in undivided Punjab, from plant to fabric, as a means to explore how life in South Asia transformed through colonial processes. Through archival research, architectural documentation and tapestries, this thesis traces the processes of cotton cultivation and production across the Punjabi landscape from pre-colonial eighteenth century to British exodus in 1947. Specifically investigating the spatial operations executed by colonial forces in order to displace Indigenous methods of production, and the resistance which came as a response from native Punjabis. Through the obsolescence of these processes, native spaces of cultivation and production were changed forever, diminishing native people's agency over their land, and altering the relationship between the built and ecological environment. By taking a multiscalar approach with every stage of cotton processing, this thesis disassembles the intertwined nature of imperial forces manifesting in scales from the river delta to the human body.

To expand beyond standardized drawing methods as a means of representation and challenge the epistemological truths upheld by these standards, I'm engaging with textile making in efforts to reconnect the work back to native practices and perspectives. The artifact crafted for this thesis was made by me as I uncovered knowledge of my grandmothers' skills as textile artisans and connected their stories to the persistence of colonial forces in modern day nation-states which continue to diminish the agency and personhood of native communities in regards to land rights.

Acknowledgements

I feel beholden to so many people in making it possible for me to do this work. Firstly, I'd like to acknowledge my committee, a thoughtful group of people I feel incredibly priveledged to have worked with. My supervisor, Jane Mah Hutton was a force of encouragement whose feedback brought me constant nuance and clarity. Most of the time, it felt like Jane believed in the work more than I did, which was unbelievably helpful in periods of doubt and low spirits. Every text and drawing I've been introduced to by Jane has pushed me to considering not only my subject matter differently but the world as a whole. As life and the world engulfed us over the last year, Jane has remained an inspiring, reassuring and postive mentor whose patience and understanding has contributed insurmountably to my work and wellbeing as a student.

To Tara Bissett, my committee member and lighthouse in the dark, your support over the last seven years has been formative to my growth as a keen learner, avid reader, inquistive researcher, and human being. From the first time I sat in your cultural history class in my second year of undergrad, your lectures, readings, movies, assignments have changed the way I look at the world and myself in it. Our conversations have consistently empowered me to find new ways of learning and challenging what I may take for granted. Thank you for giving me so much space and time throughout my academic journey.

My internal reader, Adrian Blackwell, has always remained an encouraging educator whose readings and lectures first made me consider architecture as a medium of power, and property as a concept of control. I'll be forever grateful for his perspective and the energy he gives the school through his support for students and a more equitable school environment.

In addition to the mentors at Waterloo who have supported me over the years, I'd like to express my gratitude for the peers and friends who are equally responsible for the existence of this work. I'd like to thank my TRD1 studio mates who were always kind, encouraging and thoughtful. To Harsh, your positive, energetic outlook brought excitement to my work and our conversations fuelled me to be more thought-provoking and sharp. To Shiuli, there is not a soul more balanced between poetic and intelligent – our entangled stars became a guide in the night sky as your support pushed me to stand straight and do the work with conviction. To Olivia, I could write a chapter about how much you mean to me, but I'll settle with thanking you for being a life long confidante and friend in all corners of the world.

To Sohail Haral, chairmain of the Ginners and Weavers Association of Pakistan, thank you for your support in helping me conduct my field research in Multan. I'd like to thank Zoha Shahzad and MG Apparel for allowing me tour their mills and answering my questions. Additionally, I'd like to thank the Pakistan Central Cotton Commission for their time and expertise which was instrumental to my research.

Lastly, but most importantly, I'd like to thank my family. To my grandparents, particuarly my grandmothers Naushaba and Musharraf, I hope to grow and learn in ways which honour you and contribute positively to the communities you built. To my partner Salman, I could not have done this without your unconditional support, constant encouragement and unwaivering care. Connecting with you and your family over my work made me feel so supported by community. To Abu, for reaching out to old friends in aid of my field research in Multan. To Ammi, for digging up old tools and skills to guide my textile work with expert hands. To Aapi and Phua, for keeping Pakistan a home for us and sharing old memories, places, stories and pictures.

To my Mama, Baba and Bhai – thank you for everything.
I am who I am because of you.



Dedication

Dedicated to Naniami

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Statement of Positionality

Before beginning, I would like to acknowledge the land on which I completed this work and the violence through which it is occupied. In Southern Ontario, between the cities of Cambridge and Mississauga, I live on the traditional territories of the Six Nations of the Grand River and the Mississaugas of the Credit, respectively, both of which lost vast tracts of their land through illegal treaty violations by Canadian national forces. In South Asia, the region of Punjab is currently divided between the nation states of Pakistan and India through ethnic cleansing periodically committed from 1947 to the present. It is important for me to acknowledge my complicity as a Pakistani-Canadian citizen and student in colonial violence across Canada and Pakistan, as well as in the ongoing occupation of Palestine and genocide of Palestinians in Gaza.

The year after British India's Partition, British colonial forces exercised similar spatial control through the configuration of the state of Israel on Palestine. The partitioning and reshaping of territory became a defining characteristic of British colonial subjugation across the world from Ireland to Hong Kong. When considering the 1947 Partition as a defining node within this global imperial legacy we begin to uncover networks of solidarity through which occupied peoples resisted erasure and dispossession. Additionally, it prompts us to consider contemporary globalization as an inequitable condition through which hierarchies of solidarity emerge.

In writing this thesis on the topics of colonial resource extraction and dispossession of land, it is imperative I position myself within my priveledge. My family has a history of migration. My grandfather, and three of his brothers, migrated to Pakistan from Moradabad during the Partition of British India in 1947, crossing the border along with 15 million other people – marking the largest mass migration in human history. At the time, *muhajjir* (refugees) were frequently killed en route to the newly formed states of India and Pakistan, and if lucky enough to reach their destination, faced homelessness and destitution. My grandfather, as a teen, slept in the courtyard of the Lahore Fort for two weeks before finding semi-permanent lodging.

However, in the process of nation-making, my grandfather's mother tongue, Urdu, was made the official language of the nation. This forced 95% of Pakistan's population, specifically native communities which had not migrated, to conform to a state-crafted identity.

Today, the city of Lahore, and the Pakistani province of Punjab at large, is a region of concentrated privilege across Pakistan. Punjabis, who make up the majority of the federal government and national military, have created a colonial hegemony on the country's resources. Punjab is the first province to get electricity reserves (despite the country's largest city of Karachi suffering from multi-day blackouts), the first to receive natural gas and fuel (despite the majority of it coming from Balochistan), and the largest consumer of water (sourced from the provinces of Gilgit Baltistan and Khyber-Pakhtunkhwa). The vast majority of real estate development, land, roads, highways, dams, and ports are owned by the national military. Native communities which have been exploited by this structure are brutalized, occupied, killed, controlled, and censored by the military. They are rarely included in government policies concerning their land and resources.

I have not experienced any of this inequity and authoritarianism as my family immigrated to Canada when I was four years old. Growing up in Southern Ontario, my heritage was an unassuming aspect of my life which I did not give much mental or intellectual space to. When I began my undergraduate degree at the University of Waterloo School of Architecture, the lack of a South Asian presence in canonical cultural history pushed me to question the significance of my community's built environment. This inquiry led me to postcolonial theory via the 1947 Partition of British India. The event of Partition stood out as such a significant spatial occurence, both in my own personal family narrative and the regional narrative, that examining its spatial consequences became a central focus in building my toolkit of architectural research methods. The forced movement of fifteen million people beckoned questions of urban growth, cultural transformation, linguistic evolution, and constructed environmental barriers. The concept of a 'border' defined the essence of my work – I began considering the border not as a fixed spatial condition, rather a set of sociospatial activities human and non-human actors were subscribing to over time. In the context of South Asia, the border between India and Pakistan defined both nations as antithesis to one another. As a child of both a Pakistani and an Indian, who are from the same ethnic tribe, the contradictions and limitations of the border fascinate me.

This thesis began as a way to explore the material manifestation of colonial border making in the context of South Asia. I wanted to understand how my family's subscription to Partition imprinted on to their built environment, which on a larger scale, meant trying to conceptualize the Radcliffe Line's material and ecological implications. Cotton became a medium of interest through investigation into the site's material productions by way of perusing Punjabi grocery stores.

Though I did not anticipate it at the precipice, examining cotton and its material culture became a means to reconnect with my matrilineal ancestry and begin understanding South Asia through a native feminist lens. This reconnection with my familial history deepened this work with profoundly personal implications. Within this reconnection, my physical and cultural separation from the context in which my matrilineal ancestry operated in is relevant. Innately, the diasporic experience is central to this thesis as it shapes my world and my commitment to this topic. As a student of Western education, I carry with me implicit biases which colour my perspective with unidentified orientalism. I hope to move past and establish truth beyond my Eurocentric understanding of the world.

Today, marginalized and occupied communities play a crucial role in preserving traditional knowledge. However, in Pakistan, colonial forces continue to dispossess native communities, denying them agency and autonomy even as the state calls for the preservation of crafts. This contradiction underscores the urgency of understanding and addressing the systematic erasure of indigenous rights.

Through this research, I strive to deepen my commitment to Pakistan's decolonial movements, which aim to secure autonomy for Balochistan and other native and marginalized communities across the country. This commitment includes critically examining my own complicity as a Pakistani citizen in perpetuating colonial violence. To support these movements, I advocate for economic and cultural boycotts as meaningful tools of protest.

I aim to engage ethically with research methodologies such as field research and autoethnography in order to avoid appropriating the work of others. By actively citing the works I reference, making transparent my methodologies and processes, and listening to those I wish to learn from, this work represents my ongoing commitment to equitable research practices.

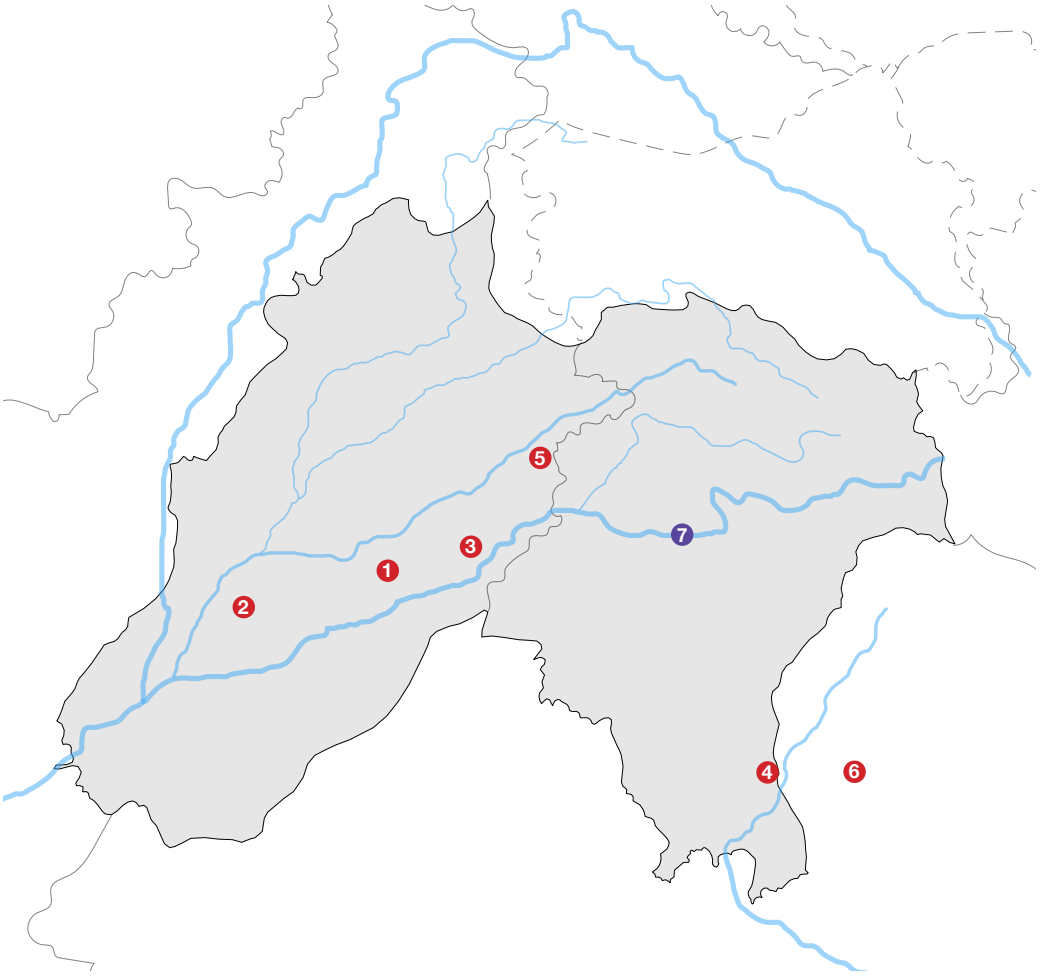
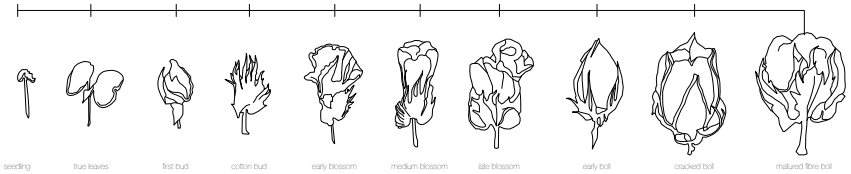


Figure 1: Map of focus sites.
Drawn by author.

STAGES OF COTTON: FROM FIELD TO FABRIC



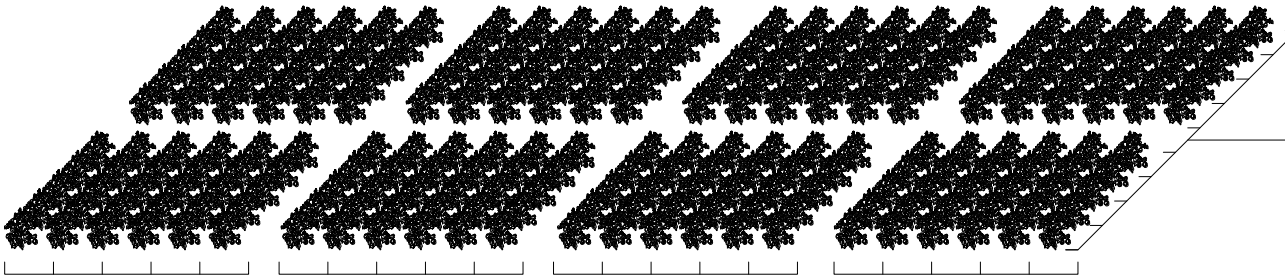
cotton cultivation | cotton plants are planted between november and february, and harvested between march and july.

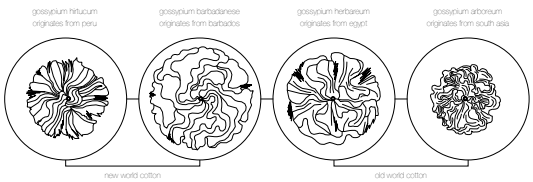
in South Asia, cotton is a Rabi plant, meaning it is grown during the spring and summer months when perciptation is at its highest. Rabi crops are typically water intensive.

cotton in punjab | cotton has been cultivated in punjab since 3500 BCE, with the discovery of the local cotton variant species, gossypium arboreum.

before the partition of british india in 1947, south asia's cotton cultivation was one of the highest in the world, with bengal and punjab being the centres of textile manufacturing.

before european colonization, "indian cotton" was considered a global commodity. this species was supplanted by "american cotton"





cotton species | gossypium arboreum is native to south asia, has short fibers and is more suited to arid hot climates.

in the 19th century, it was replaced with gossypium hirtucum in south asia by british colonists, as the latter yielded more bolls per plant, had longer fibers and is more suited to cold climates.

crop patterns | cotton plants are grown in grids of 6 by 6, with a lot of 36 plants total. the plants are planted 1.5 meters apart on center. each lot is kept 3 meters away from each other to mitigate pest transfer.

cotton pickers | in punjab, the majority of cotton picking is done by women. in pakistani punjab, 95% of cotton pickers are women, while machine cotton picking is growing more popular, most farms use both.

in recent years, there has been an exponential rise in suicides amongst cotton farmers and pickers.

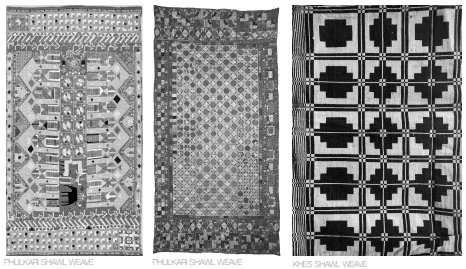
it typically takes 4 women, 8 hours to pick half an acre of cotton bolls.

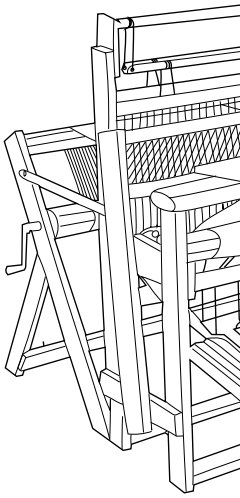


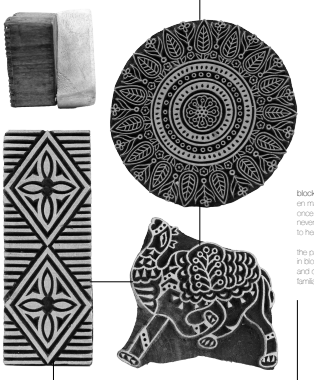
block printing | printing is a common textile process in south asia used to decorate cloth. the most common form of printing is block-printing, where soft wood is carved to create a relief work which is stamped in natural dye fabric paint and then imprinted on the cotton cloth.

this is typically done for clothing and household textiles, as well as ajrak. the majority of block printers are men, and muslim.







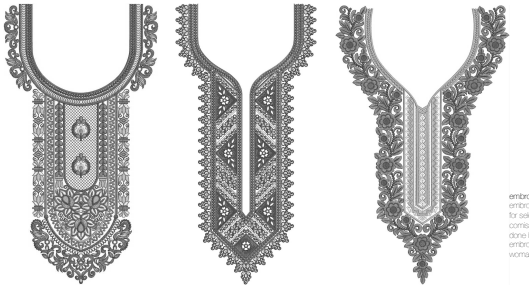


block printing | this process is typically done en masse to produce a lot of printed cloth at once. the printing is done in layers of 1-3, never more than 5 so the cloth doesn't get to heavy.

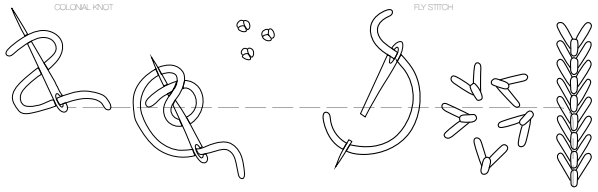
the patterns, symbols and iconography used in block printing is suited in punjabi tribalism, and due to colonialism, has become familiar globally.

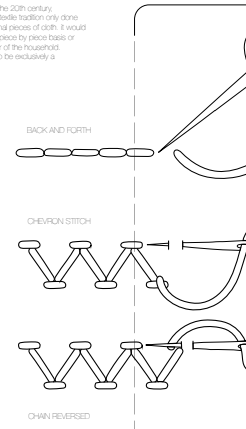
WOODEN PRINTING BLOCKS

EXAMPLES OF PUNJABI CLOTHING EMBROIDERY

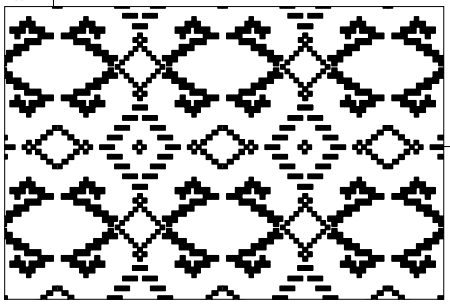


embroidery | until the 20th century, embroidery was a textile tradition only done for selective, artisanal pieces of cloth. it would comissioned on a peice by peice basis or done by a member of the household. embroidery used to be exclusively a woman's job.

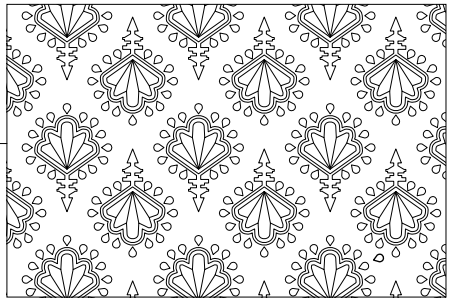




BLOCK PRINT PATTERN



BLOCK PRINT PATTERN



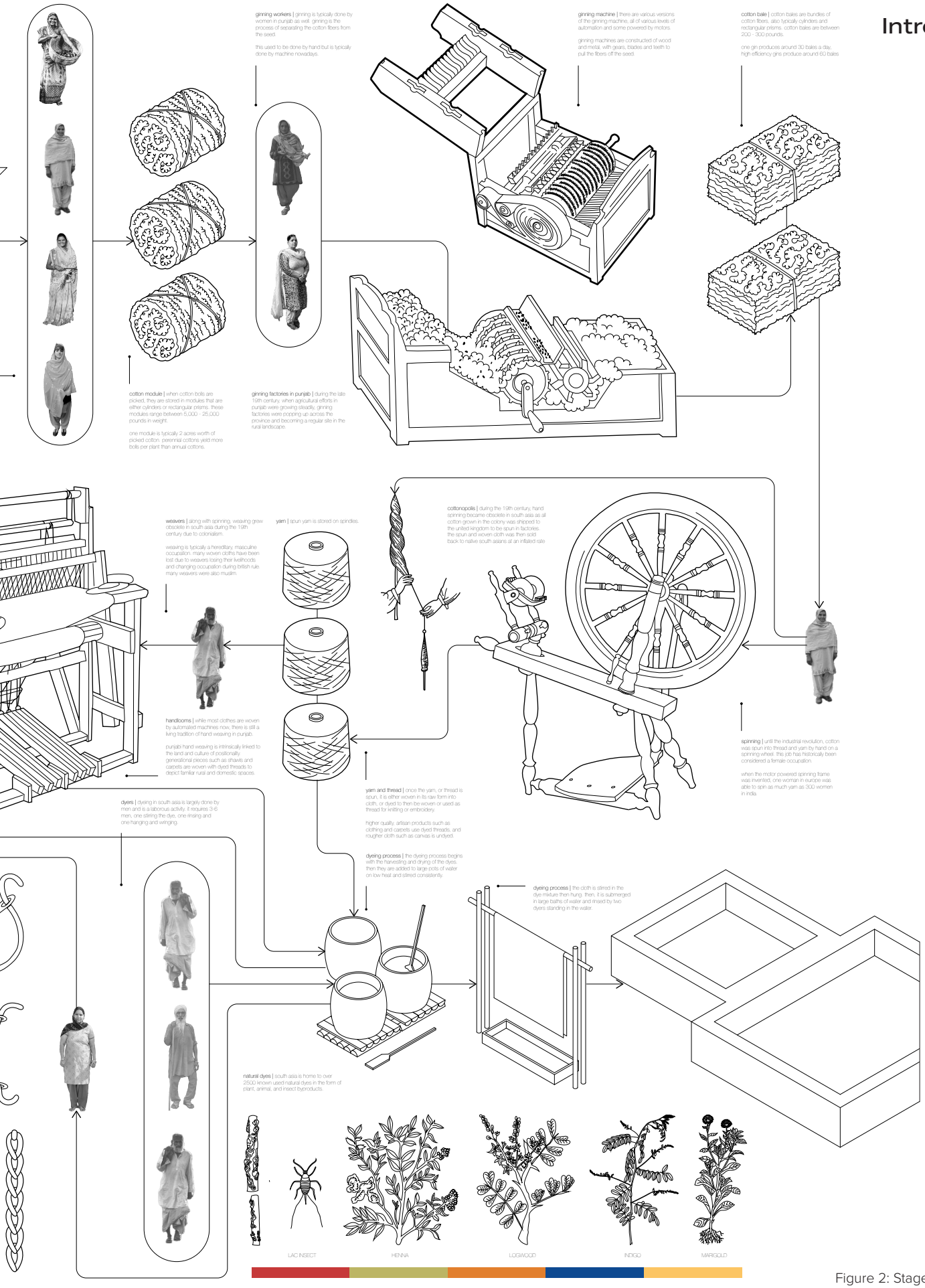


Figure 2: Stages of cotton processing. Drawn by author.

Introduction

SUNDAR'S PHULKARI BAGH

Sundar Kaur took four years to embroider her *phulkari bagh*.[A] Made on a field of muted yellow fabric, elaborate geometric patterns abstract her Jhelum home as a dense garden in season's bloom. Her youngest daughter, who was taught *phulkari* by watching her mother embroider this shawl, received it eight years later on her wedding day. Her wedding procession took the bagh *(garden)*[B] from Jhelum to Rawalpindi. After another eight years, Sundar's daughter wore the thick shawl underneath her clothes in the summer heat of 1947 as her family fled from Rawalpindi to Delhi in the wake of British India's partition.[1]

The first literary mention of *phulkari* – translating to "flower work" in Punjabi, as a term that describes a singular textile tradition – was in Waris Shah's poetic retelling of the folktale, Heer Ranjha.[2] Phulkari is where prose begins, describing rich fabrics and deep threads crafted by hand as a rendering of northern plains expanding along the banks of the Chenab. Shah's draping this luscious scenery on Heer imbues her with the reverence of a distinct living landscape, animating her as a symbolic synthesis of Punjabi ideals – representing both the specific position of her hometown while subscribing to the unity of territorial Punjab, stitched together by the five defining rivers. In Shah's medieval Punjab, fluvial acts, such as flowing, drying, and flooding, both connected people and defined their differences. Thousands of communities lived across the river basin through various ways of making, building, farming, speaking and organizing, relying on one another's differences to sustain a symbiotic eco-cultural framework.

After a hundred years of British occupation, this diversity was ruptured by colonial practices of land appropriation, extraction and division. Before exodus, lawmakers fashioned the territory into two nation states, outlined by a border which codified a religious divide into the fabric of South Asia forevermore. This final operation of spatial reconfiguration forcefully displaced fifteen million people, marking the largest mass migration in human history.[3] In August 1947, as millions left their homes never to return, they took with them whatever they were able to carry. Many Punjabi women, like Sundar's daughter, wore baghs under their clothes, inscribing these textiles as archives of spatial memory.

1. Aanchal Malhotra, Remnants of a Separation: A History of the Partition through Material Memory (New Delhi: HarperCollins, 2017), 107–117.
2. Waris Shah, Heer Ranjha: The Romance of Heer and Ranjha, trans. Charles Frederick Usborne (Lahore: Union Steam Printing Works, 1910).
3. Yasmin Khan, The Great Partition: The Making of India and Pakistan (New Haven, CT: Yale University Press, 2007), 155.

A. The companion artifact borrows symbols from *phulkari* in its weaving and embroidery, such as the lotus, leaf, road and wall. These symbols denote to the language of spatial representation *phulkari* builds.

B. *Bagh* – translates to garden, but in the textile context, it refers to a garment which is similar to a shawl but larger in size.



Figure 3: Sundar's Phulkari Bagh.

Drawing by author.
Drawing of a photo reproduced in Aanchal Malhotra, Remnants of a Separation, p. 107.

RESEARCH QUESTION

The Indus River Basin is the primary source of fresh water for close to three hundred million people.[4] It is foundational to all life in Punjab and carves out regional identities and diverse landscapes within its domain. Before 1849, Native Punjabis organized civilization around the five tributary rivers[C] of the Indus, using different resources as means to shape their livelihoods.[5] The territory's name, meaning five (Punj) waters (ab) denotes to this spatial system – defined by diversity in perspective, environment, materials and craft. British colonists, who viewed land as a limitless source of power and capital, began transforming the landscape to extract as much wealth as quickly as possible. With little regard for the structure of indigenous life, these extractive land practices ruptured Punjabi economies, ecosystems, and systems of knowledge.

C. Five tributary rivers are – Jhelum, Chenab, Ravi, Beas, and Sutlej.

This is not to say Punjab became the site of two clashing epistemologies – one British, the other Punjabi – nor did colonial intervention in South Asia simply disable native life through its transformation into a site of extraction. By investigating the cotton textiles of Punjab, we begin to understand a unique history of material exchange. Cotton, which was initially harvested for fabric by the Indus Valley civilizations in 3500 BCE became a highly valued global commodity as produced by South Asian communities.[6] The success and quality of the native cotton textile economy is what motivated British colonists to occupy and transform South Asia, making both colonial and native textile traditions successors of the same indigenous praxis.

I use cotton as a lens to understand colonial plunder as a spatial and environmental act of violence. With a rich presence across cultural archives, the material history of cotton presents the possibility of understanding native life in South Asia outside of colonialism compared to under British occupation. Moreover, the alienation of indigenous cotton practices serves as a pivotal lens for examining colonial dependency on, and yearning for, native resources and knowledge systems. Cotton, from plant to fabric, has changed drastically in its material form. This material change is the result of spatial reconfiguration and industrialization as a colonial force in South Asia. Through a spatial analysis of the disruption and reconfiguration of native life resulting from these infrastructural transformations[D], this thesis highlights the impact of colonial occupation in dismantling native ecosystems, ultimately contributing to climate catastrophe.

D. Infrastructural transformations including extensive irrigation/canal building, railway integration, factory work, and fossil fuel powered mechanization.

I examine how domestic structures were reorganized in rural Punjab revealing how the occupation aimed to accelerate the territory's capital output and integrate the Punjabi population into the colonial network of cheap labour.

4. David Gilmartin, Blood and Water: The Indus River Basin in Modern History (Berkeley: University of California Press, 2015), 14.
5. Neeladri Bhattacharya, The Great Agrarian Conquest: The Colonial Reshaping of a Rural World (Ran ikhet: Permanent Black, 2018), 15.
6. Sven Beckert, Empire of Cotton: A Global History (New York: Alfred A. Knopf, 2014), 28.

South Asia before Partition.



South Asia after Partition.



Figure 4: Maps of South Asia before and after Partition, 1947. Drawing by author. Drawing of maps reproduced in Yasmin Khan, The Great Partition, p. xxxii – xxxiii

Various spatial operations executed by occupying British forces, from the scale of the river to the body, transformed Punjab's ecologies and inextricably linked native life to the fate of the metropole. I seek to spatialize Punjab's transformation to deepen our collective understanding of forms of destruction imposed on British India while repositioning infrastructure and technology as colonial tools of alienation. By grasping this historic transformation through the lens of cotton, I ask – how does embodied knowledge transform textiles into cultural repositories of spatial memory? I'm particularly interested in the ways spaces of textile production shifted and expanded to alienate the native population from their own systems of knowledge. This reading of colonial land practices challenges the post-coloniality of South Asia, reconceptualizing colonialism as an ongoing transformative process.

METHODOLOGY

To understand the metamorphosis of cotton, both spatially and materially, I will look at each stage of processing – growing, ginning, spinning, weaving – in the journey of plant to fabric. In each chapter, I will investigate the material changes underwent by cotton in specific stages of processing through its transformation over history. This includes (1) building an understanding of the precolonial method of processing, and comparing it to the (2) colonial disruption and reconfiguration of that process. Each chapter will concern itself with a single stage of processing including case studies that consider moments of native resistance to highlight the limitations of colonial forces. The first chapter starts with the largest scale of the Indus River Basin, with the last chapter descending to the scale of the garment and its stitches. This methodological investigation will underscore British administration's scheme to usurp native economies through occupation, while questioning our contemporary understanding of the Punjabi landscape as post-colonial.

A notable amount of literature and written history pertaining to Britain's occupation and colonial policy is accessible through various sources, however, a comparatively limited archive of Punjabi perspective exists, especially pertaining to space outside, before and separate from European colonial intervention. In the British framework, Punjabi history which existed through a persisting oral tradition, was devalued in comparison to written and visual forms of historical documentation.[E] All documentation under occupation was in English, which was only accessible to those who could afford an expensive education. This has resulted in the literary record of Punjab largely being written by colonial benefactors rather than native Punjabis. Gayatri Spivak posits the term "epistemic violence" to conceptualize the erasure of native forms of knowing by European structures of power. According to Spivak, settler systems of science, academia, and technology risk devaluing the material knowledge of native communities by formulating them as primitive or lesser epistemologies.[8]

This thesis engages with various methods of research to form a holistic interpretation of the site. Firstly, I focus on recollecting the Punjabi landscape through its presence in oral and material tradition, such as poetry, embroidery, and weaving. Punjabi folklore often positions itself through a detailed description of a textile, whether a bridal trousseau or a hanging rug. From this sensory description, prose builds worlds through material experience rooted in intimacy and craft expression. Beyond textile presence, the temporal and spatial weight of communal cotton production imprints onto allegories, proverbs, poetry and ideology.[F] In narrative prose, spinning thread, weaving fabric, and embroidering textiles are key actions symbolic of introspection and transformation. These processes are particularly impactful in representing the feminine voice as a vital actor within Punjabi world building.

E. The Punjabi language is the tenth most spoken language in the world yet has never been state approved. During Mughal rule, Persian was sanctioned as the state language, and when Ranjit Singh came into power, he kept to this tradition. The rationale was chalked up to Punjabi's multiple written scripts – Indo-Persian, Gurmukhi, and Devnagari.

F. Sanskrit, Indo-Persian, Gurmukhi, Devnagari and English, all spoken in Punjab at a point, appear in the ornamentation of the textile artifact representing the imprint of ecology and hydrology on the linguistic landscape.

7. Farina Mir, "Imperial Policy, Provincial Practices: Colonial Language Policy in Nineteenth Century India," Indian Economic and Social History Review 43, no. 4 (2006): 395–427.
8. Gayatri Chakravorty Spivak, "Can the Subaltern Speak?" in Marxism and the Interpretation of Culture, ed. Cary Nelson and Lawrence Grossberg (Urbana: University of Illinois Press, 1988), 271–313.

Concurrently, I analyze archival information from colonial sources such as irrigation network maps, newspaper clippings, mill construction drawings and census records, creating a spatial mosaic of a lost landscape. This archival information gives insight into the modalities of colonial occupation with architectural detail. Contrasting the detailed, scalar and pragmatic documentation of colonial spaces under occupation, pre-colonial Punjab, scarcely documented spatially or visually, exists in stories and shawls. I refer and build from the work of other researchers in hopes of using architectural tools to add detail in our collective spatial understanding of a native Punjabi landscape. Simultaneously, their work evokes me to uncover an alternative perspective on South Asian colonial studies by centring native experience and challenging the temporal rigidity through which colonialism is generally understood.

Additionally, to understand the contemporary context of Punjab as an outcome of Partition and British occupation, I conducted field work in Pakistan this October. In Multan I visited a cotton farm, the laboratories at the Central Cotton Commission of Pakistan, an industrial weaving mill, and MG Apparel – a feminist textile mill. I also had the opportunity to meet a professional handweaver and observe him using his loom in Skardu, as well as a collective of embroiders in Lahore based in the old city.

Lastly, to construct a purposeful conception of Punjabi native life, it is imperative to centre indigenous knowledge systems in efforts to decolonize the landscape. Historians William Cronon and James C. Scott both emphasize the knowledge embedded in inconspicuous elements of everyday life, particularly in the ways marginalized groups use small acts to subvert power.[9] Conceptualizing Punjabi epistemology begins with understanding how native life has endured colonial destruction in unassuming ways, from embroidery motifs to fabric weaves.

My research is driven by the journey of making a textile artifact to engage with the embodied knowledge found in textile traditions such as weaving and embroidery. The artifact, in the dimensional format of a traditional sari, traces the Sutlej River, cutting right through the Cotton Belt.[G] The river's hydrological imprint is left in coats of indigo dye with techniques such as printing, embroidery and weaving layered in response to the water basin. The river's representation in addition to the long format renders the textile into a spatial and temporal document. As a researcher and growing craftsperson, practicing indigenous techniques of storytelling through textile production serves as an incomparable opportunity to both reconnect with ancestral knowledge and materialize the process of reconnection through learning. My work relies on a theoretical framework that critically assesses the praxis of colonial transformation deployed in the region from 1849 to the present day. The foundation of this framework rests on scholarship in postcolonial theory, environmental colonialism, and spatial justice with a focus on the material history of British occupation and Partition.

G. The Punjabi Cotton Belt runs south of the Sutlej River, from the Thar Desert in the east to the Koh-e-Sulaiman mountain range in the west.

9. James C. Scott, Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed (New Haven, CT: Yale University Press, 1998), 342.

The first chapter starts with the cotton plant at the stage of cultivation. The scale of analysis in this chapter highlights the river basin in order to analyze the various methods of land organization within its regions.

Among the four botanical species[H] of cotton domesticated in ancient times, *Gossypium arboreum*, or "desi cotton," was first cultivated by the Harappa civilization for textile production.[10] This agricultural practice, which extended from antiquity till the nineteenth century, was ruptured under British occupation through the displacement of desi cotton by the American variant, *Gossypium hirsutum*, and the canalization of the Indus River Basin.

Desi cotton was traditionally left unharvested for many seasons to allow perennial bolls to form long, translucent, strong fibres. Due to its delicate seed structure, the bolls could only be ginned by hand, not machine. This made it unsuitable for the industrial model of farming. Thus began the Indian Central Cotton Committee's scheme to replace all commercially farmed cotton in British India with the American variant of *Gossypium hirsutum*.[11] This shift to plantation-style economics led to the extinction of thousands of native cotton subspecies.[12]

Drawing on the work of historian Alfred Crosby, the transformation of South Asia's cotton landscape can be critically observed through what he refers to as "ecological imperialism."[13] Crosby theorizes the success of European colonialism was not due to military or technological superiority but rather through reshaping ecosystems in ways that favoured European settlers. In the case of Punjab, large-scale ecological transformation can best be observed during the 1880s, when British engineers launched an ambitious scheme to irrigate six million acres of land.[14] The irrigation network's construction divided land along extractive lines, changing Punjabi culture forever.[I] A complex set of ecosystems were lost in the process.

H. Old World (from Asia and Africa, known to European groups since antiquity.): Gossypium arboreum – native to South Asia, Gossypium herbaceum – native to sub-saharan Africa.

New World (from the Americas, known to European groups since the 16th century.): Gossypium hirsutum – native to Mesoamerica, Gossypium barbadense – native to Peru/Ecuador.

I. The stitching of the artifact ollows the canal network around the Sutlej River.

10. Sven Beckert, Empire of Cotton: A Global History (New York, NY: Vintage Books, 2015), 17.
11. Meena Menon and Uzramma, A Frayed History: The Journey of Cotton in India (New Delhi: Oxford University Press, 2017), 23.
12. Menon and Uzramma, A Frayed History, 14.
13. Alfred W. Crosby, Ecological Imperialism: The Biological Expansion of Europe, 900-1900, 2nd ed. (New York: Cambridge University Press, 2004), 105.
14. David Gilmartin, Blood and Water: The Indus River Basin in Modern History (Berkeley, California: University of California, 2020), 185.

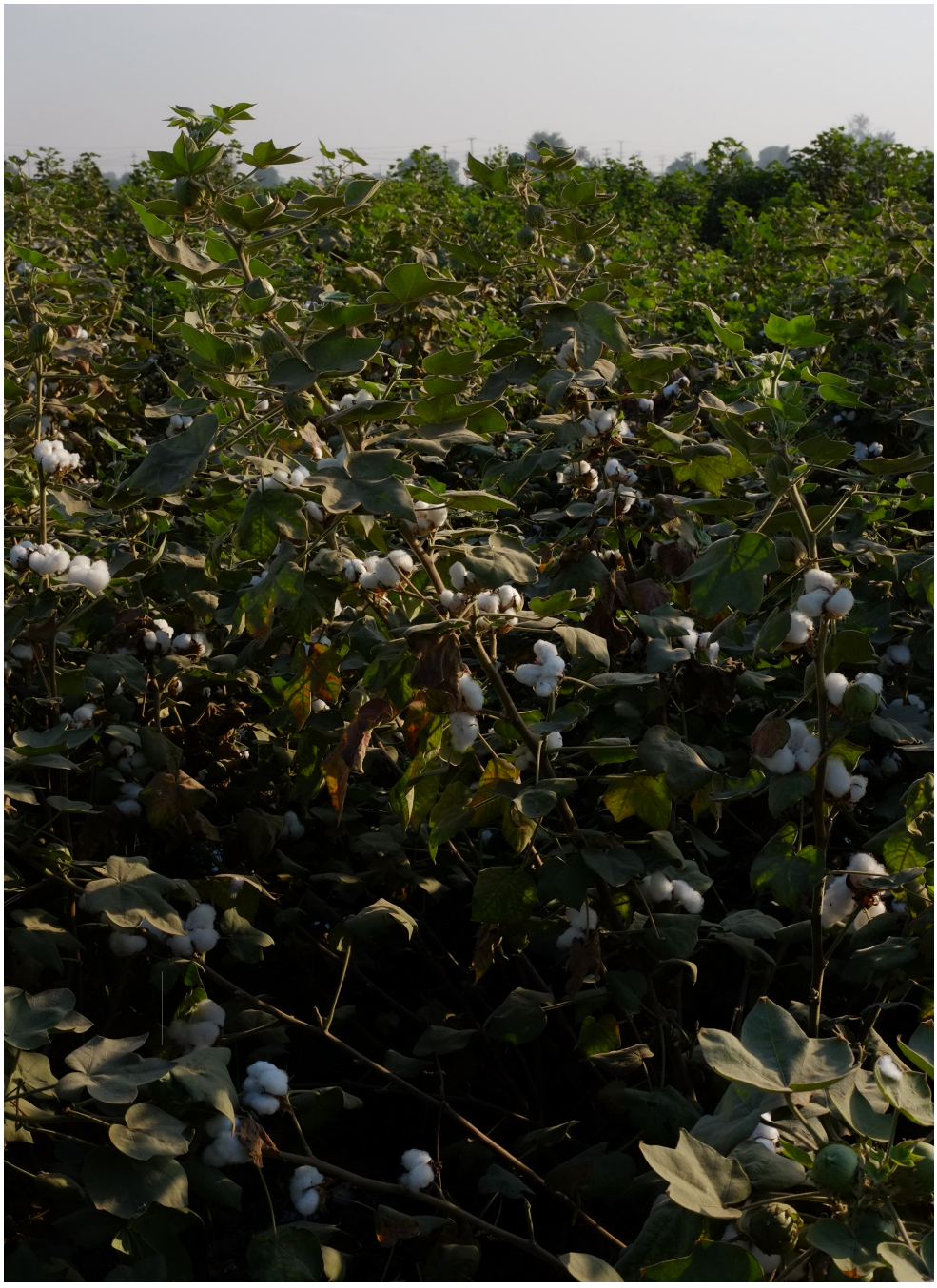


Figure 5. Cotton fields in Multan, Pakistan. Photograph by the author, 2024.

The second chapter looks at the stages of ginning and spinning, historically practiced in the same space and overseen by the same people. At the urban and architectural scale, I examine the systems that define the home economy and explore how industrialization has reshaped the spatial dynamics of Punjab.

In the eighteenth century, British civil and economic interests pushed technological advancement and colonial land occupation in a successful effort to supplant South Asia as the global leader in cotton textile production. The beginning of the Industrial Revolution in England was marked by the invention of the motorized spinning frame, which gave one English woman the ability to spin more cotton yarn in a day than three hundred women in India.[15] This mechanization sped up the energy and time intensive processes of ginning, spinning and weaving cotton, transforming a once lucrative handicraft into an industrially manufactured good.

The pre-colonial method of textile production in Punjab kept the growing and processing of cotton close to one another, with members of the same family, household or village engaging with the plant in its transformation from seed to yarn.[16] At the end of the nineteenth century, the textile processing machinery of the European Industrial Revolution made its way to the colonies, evidenced by the construction of more than a hundred gins in Punjab between 1885 and 1895.[17] Understanding the displacement of women's work through an ecofeminist lens highlights the connection between disempowerment of labour and extraction of resources. Historians such as Vandana Shiva stress the historically fundamental role women as leaders have played in the ecological wellbeing of communities.[18] The factory as a representation of capitalist ideologies, undermined the urban fabric of Punjabi towns and cities, while facilitating the creation of slums, both spatially and by way of exploitative labour practices.[I]

The industrialization of South Asia dismantled its independent economy, transforming the subcontinent into a resource and labour body for the British Empire. Colonial labour practices, reinforced by systemic racism, severely degraded the working conditions of native populations—a legacy that continues to affect labor dynamics across South Asia today.

I. The artifact shows changing patterns from top to bottom. changing in size and shape, denoting to the construction of mills in Punjab and their alienation of domestic spaces of production.

15. Mukund, Kanakalatha. "Indian Textile Industry in 17th and 18th Centuries: Structure, Organisation and Responses." Economic and Political Weekly 27, no. 38 (1992): 2057–65.
16. Prakash, Om. "From Negotiation to Coercion: Textile Manufacturing in India in the Eighteenth Century." Modern Asian Studies 41, no. 6 (2007): 1331–68.
17. Shashi Tharoor, Inglorious Empire: What the British Did to India (s.l.: Penguin Books Ltd, 2018), 427.
18. Vandana Shiva and Maria Mies, Ecofeminism (London: Zed Books, 1993), 46–50.



Figure 6. Kandukuru Nagarjun. “Courtyard Inside Haveli.” Flickr. Accessed November 28, 2024. https://www.flickr.com/.

The third chapter looks at the transformation of thread into fabric through weaving at the scale of the body. This scale allows us to understand the nuanced aspects of historic cotton culture and craft as it relates to both the individual and the body collective.

In the early twentieth century, British administration pushed for the increased production of cotton by constructing weaving mills and dismantling labour laws. Hand weaving, unable to compete with the speed and efficiency of power looms, became obsolete, resulting in the extinction of countless distinct cotton fabrics and the further disempowering of the native working class.[18] By World War Two, most of British India's working class labored in overcrowded cotton mills under harsh conditions, with factories doubling their workforce during the war.[19]

The plight of mill workers in the context of a growing anti-colonial sentiment gave birth to the Khadi Movement, a continental decolonial movement which sought to re-establish independence in the textile industry.[20] The chapter considers geographer Doreen Massey's theory of power geometries, which highlights the unequal value given to life in different relational spaces.[21] As Britain planned its exit from South Asia, sites of violence, exploitation, and agrarian plight became focal points for divisive land organization. Punjab and Bengal were divided along religious lines, saturating them with ethnic cleansing and mass displacement. By August 1947, millions of people were moving across Punjab, leaving their homes behind, never to return. An estimated fifteen million acres of land were abandoned on either side of the Punjab border.[22]

Despite fracturing land practices, native South Asians sustained their craft, continuing to embed meaning in textiles as tools for world building and memory.

18. Bishnupriya Gupta, "Competition and Control in the Market for Textiles: Indian Weavers and the English East India Company in the Eighteenth Century," How India Clothed the World: The World of South Asian Textiles, 1500-1850, 2009, 281–306.
19. Mukherjee, Aditya. "Empire: How Colonial India Made Modern Britain." Economic and Political Weekly 45, no. 50 (2010): 73–82.
20. M.D. Sampath, The Story of Indian Manufacturing: Khadi, Cotton, and Colonialism (New Delhi: Concept Publishing Company, 2020), 120–140.
21. Doreen Massey, Space, Place and Gender (Minneapolis: University of Minnesota Press, 1994), 148–150.
22. Yasmin Khan, The Great Partition: The Making of India and Pakistan (New Haven, CT: Yale University Press, 2007), 156.

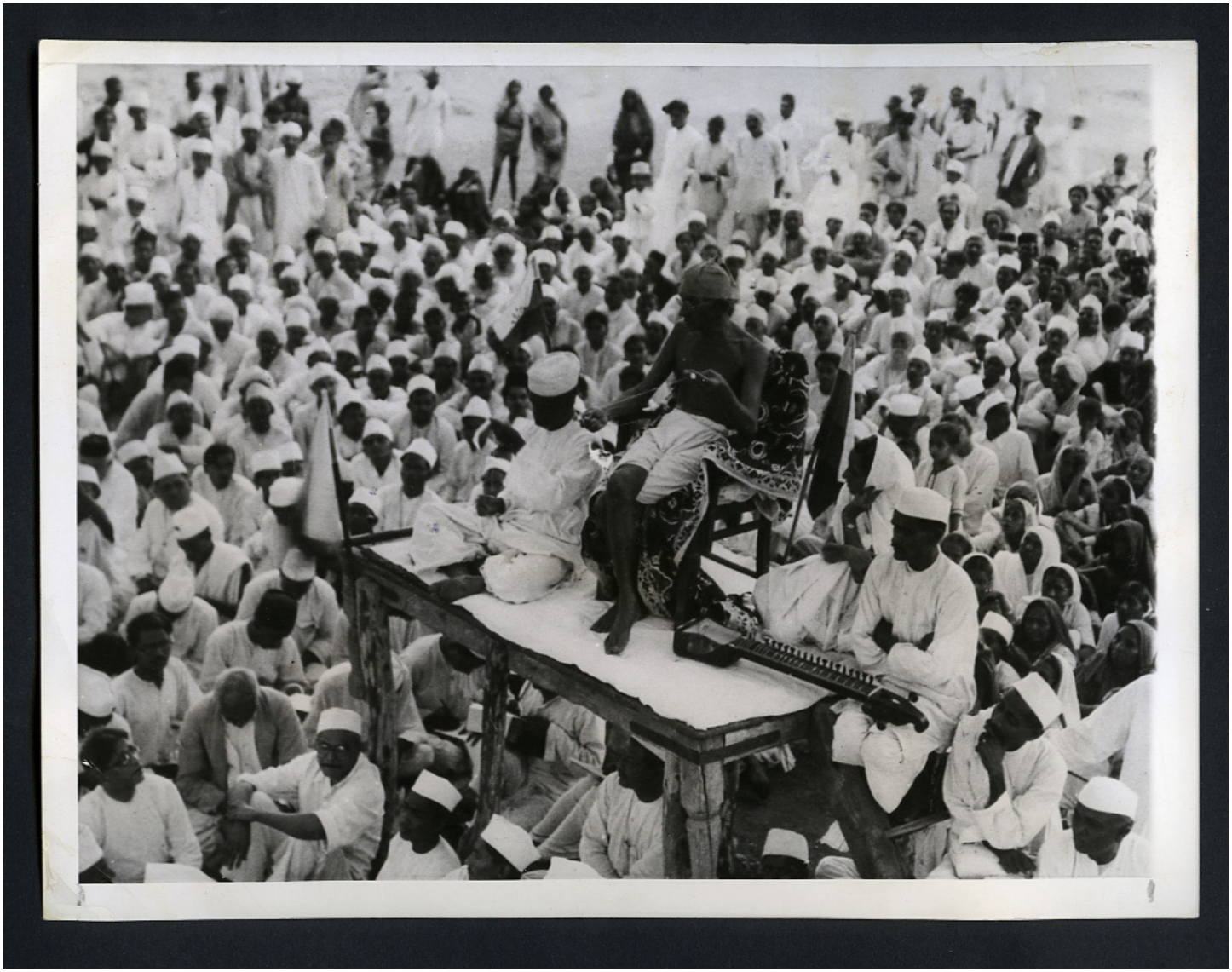


Figure 7. “While Addressing His Followers, Gandhi Spins by Hand.” Photograph. Wikimedia Commons. Accessed November 28, 2024. https://en.wikipedia.org/.

The final chapter looks at ornamentation through the lens of my family's story of migration during Partition, from central India to what is now the Pakistani province of West Punjab. This auto-ethnographic approach focuses on the scale of textile, grounding the narrative in the making of a cotton artifact as a means to reconnect with my family's matrilineal heritage.

The violent disruption caused by the Partition of British India led native communities to resist by embedding their memories and histories into craft and material culture. Continuity of native knowledge through craft allows us to understand life from a Punjabi perspective in meaningful ways such as phenomenological experiences of space and environment.

Building on sociologist Aníbal Quijano's work, engaging with the "epistemic decolonization" process becomes valuable in disassembling the persisting coloniality present in India and Pakistan today.[23] Cotton, as both an indigenous material of making and knowing, as well as a tool of colonial transformation, serves as a meaningful medium to begin understanding Punjabi life and land through native epistemology while simultaneously tracing colonial crime through occupation. By making the artifact, I hoped to connect with my maternal and paternal grandmothers. As the artifact seeks to build worlds by engaging and acknowledging native practices, the story of colonial transformation, through a Punjabi perspective, unravels with the fabric's length.

The historian Gerald James Larson describes the 1947 Partition of British India as "the defining event of modern, independent India and Pakistan" and asserts that Partition "continues to [be]…the core plot in the unfolding narrative of [the region today]."[24] The freshly outlined nation-states of Pakistan and India inherited and have perpetuated resource extraction, ecological degradation, land theft, and violent oppression, fuelling political unrest and climate crises. Widespread displacement concurrent with nation-making allowed state authorities to craft nationalist identities which imposed a fundamental difference between people of the same ethnicity, community, and even family. This othering relied on the implied material and temporal permanence of a colonially crafted line. Today, hostile relations between India and Pakistan form the foundation of authoritarian domestic policies which marginalize native communities to control land, water, and other resources.



Figure 8. My mother, older brother and I photographed in Lahore, Pakistan, 2000. Photograph by author.

23. Aníbal Quijano, "Coloniality of Power, Eurocentrism, and Latin America," Nepantla: Views from South 1, no. 3 (2000): 533-580.
24. Gerald James Larson, India's Agony Over Religion (Albany: State University of New York Press, 1995), 175.

GUIDING THOUGHTS

In his work, "The Wretched of the Earth," Frantz Fanon frames the colonial experience as an irreversible, violent transformation.[25] The International Union for Conservation of Nature (IUCN) estimates over four hundred animal species and just under a thousand plant species went extinct across the South Asian subcontinent as a result of colonial occupation.[26] In tandem, research conducted by economist Dylan Sullivan and anthropologist David Hickel proves British colonial policy killed over 100 million native Indians between 1880 and 1920.[27] Consequently, South Asia, which historically accounted for a quarter of the world's economy, diminished to seven percent of the global gross domestic product over a hundred years of British colonialism.[28] This data explicitly demonstrates the destruction of life intentionally executed by colonial forces in efforts to propagate a British economy built off native land, resources, and labour.

In this document, I seek to uncover a spatial understanding of loss and displacement in British occupied Punjab by analyzing material transformations within cotton. My research is based on the analysis of archival documentation, Punjabi oral tradition, material artifacts and lived knowledge, guided by decolonial, ecofeminist theory. As colonial governance persists in South Asia, destruction of native land and people is perpetuating a growing climate catastrophe. The imposition of state ideologies is met with resistance through the enduring diversity of people, crafts, and landscapes. Central to effective climate action is the reconnection with native knowledge systems, which offer sustainable and resilient approaches to addressing environmental challenges.

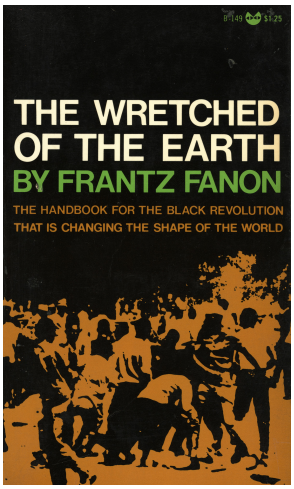
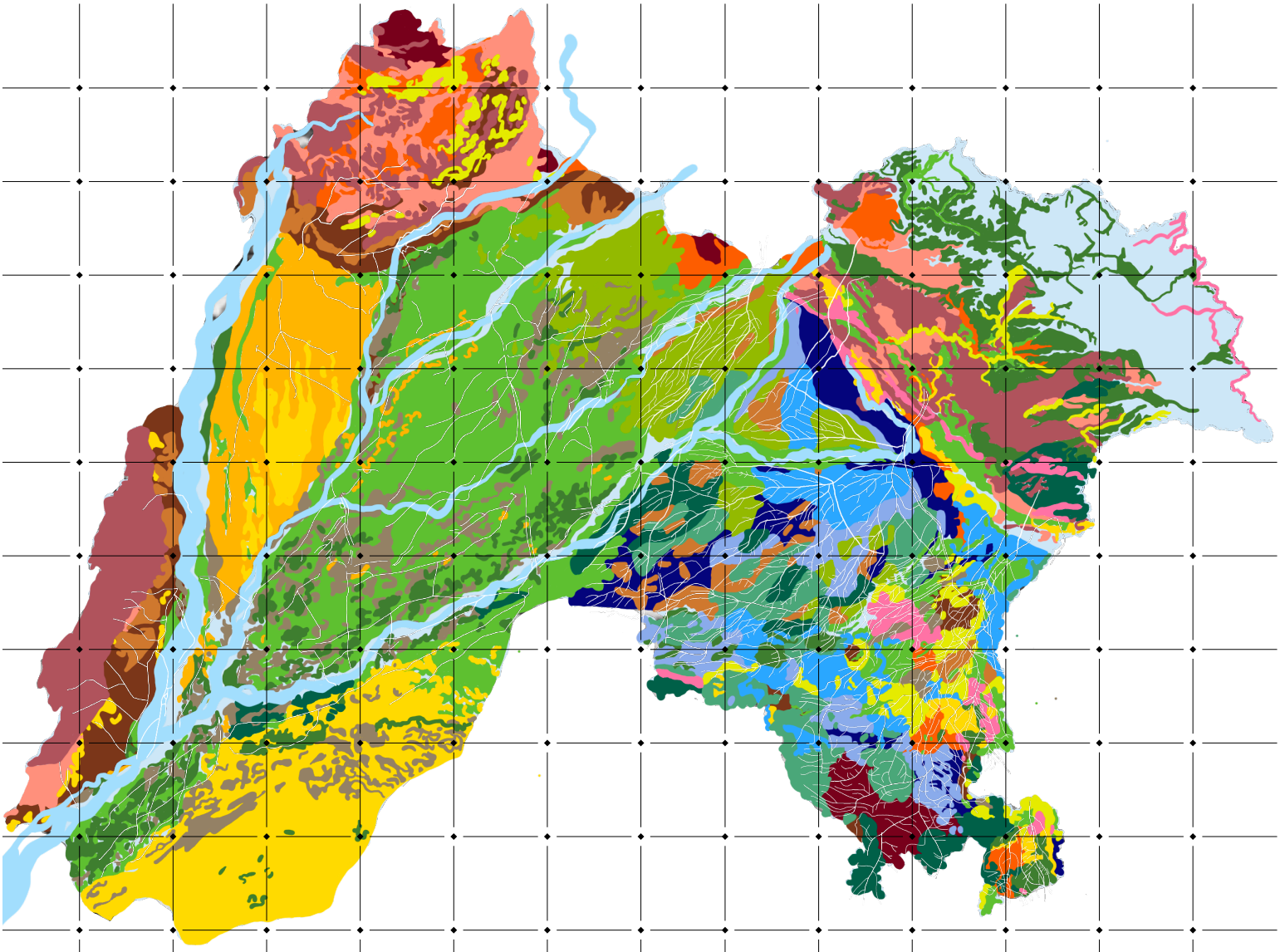
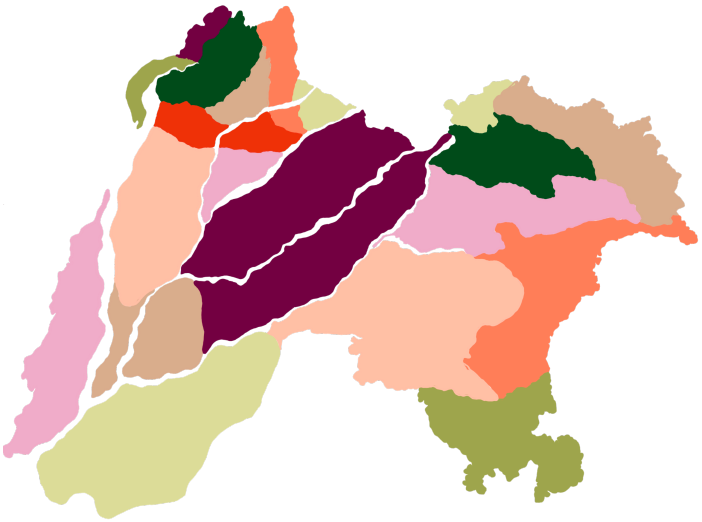


Figure 9. The Wretched of the Earth, by Frantz Fanon. Photograph. Flickr. Accessed November 28, 2024. https://www.flickr.com/.

25. Frantz Fanon, The Wretched of the Earth, trans. Richard Philcox (New York: Grove Press, 2004), 6.
26. International Union for Conservation of Nature, "The IUCN Red List of Threatened Species," accessed October 24, 2024, https://www.iucnredlist.org/.
27. Jason Hickel and Dylan Sullivan, "How British Colonialism Killed 100 Million Indians," Al Jazeera, December 2, 2022, https://www.aljazeera.com/.
28. Jeffrey G. Williamson and David Clingingsmith, "India's Deindustrialization in the 18th and 19th Centuries," (Harvard University, August 2005), December 13, 2016, https://web.archive.org/

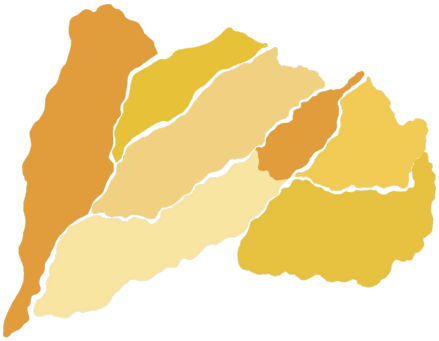
Undivided Punjab
Soil Categories Map





Linguistic Dialect Map

- Majhi
- Hindko
- Derewal
- Jhangochi
- Doabi
- Tholochi
- Malwai
- Pothohari
- Pawadhi
- Multani
- Pahari
- Dhanni
- Shahpuri
- Chachi
- Bhatiani
- Riasti
- Chambiali
- Ghebi
- Kangri



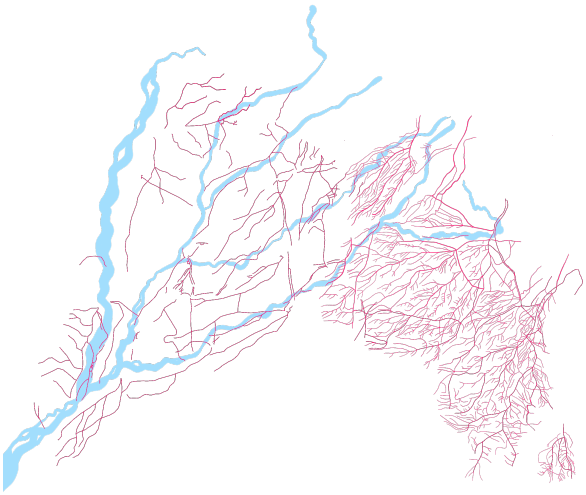
Doab Regional Map

- Sindh Sagar
- Majha
- Malwa
- Jech
- Doaba
- Rechna
- Bari



Topographic Map

- **Highest elevation point:** Reo Purgyil, Kinnaur district, Himachal Pradesh – 6,816 meters (22,300 ft.)
- **Lowest elevation point:** Rahim Yar Khan district, West Punjab, Pakistan – 100 meters (328 ft.)



Irrigation Canal Network Map

- Indus River
- Sutlej
- Jhang
- Ravi
- Chenab
- Beas
- Canals

Figure 10. Soil, dialect, arid-pastural zones, topographic, canal network maps of undivided Punjab. Drawn by author.

Cultivation – Building an Irrigation Network *(1850s to 1890)*

N5 HIGHWAY THROUGH HARAPPA

Driving south on the N5 towards Multan, the highway cuts through the unassuming ruins of the ancient Indus Valley city, Harappa. In the 1930s, a group of archaeobotanists identified some of the world's oldest woven cotton threads amongst these Harappan remains.[1] Traces of *Gossypium arboreum* (desi cotton), commonly known as tree cotton, were found in excavation sites across the Indus River Basin, along with evidence of tools used in sophisticated urban environments for the purpose of cotton textile production.[A] Historically, cotton was picked from decades old trees, separated from seed, spun and woven by hand into varying grades of fabric, worn by all, from peasants to kings. Referred to in Vedic texts as "the sacred thread", cotton garnered legendary cultural and economic value. When Ancient Greek philosopher Herodotus travelled to Punjab, he marveled, "There are trees growing wild there, whose fruit is a wool exceeding in beauty and goodness that of sheep; and the natives make their clothes of this tree-wool."[2]

These trees disappeared from the Punjabi landscape with British occupation.[3] Colonial agents constructed an extensive irrigation network along the river basin on dispossessed territory, enforcing a plantation-style cultivation system across Punjab, disrupting the diversity of local ecosystems—most notably through the displacement of *Gossypium arboreum*, or desi cotton. In the 1880s, Lieutenant Governor Aitchison's administration launched an infrastructural scheme to irrigate vast tracts of land in central Punjab.[4] State engineers used the Indus River Basin as a framework for extensive canal building, with every city, town and village cut, intersected, outlined and marked by large infrastructural canals. All of Punjab transformed as its hydrological life force was contorted. Our focus is on examining the impact of this infrastructural transformation on rural communities throughout the territory.

First, I will examine the cotton plant as an ecological phenomenon. By looking at desi cotton's properties and unfurling the relationship between the plant and its environment, I am able to conceptualize cultivation practices as modes of spatial organization in the pre-colonial landscape. Next, exploring the impact of canalization in transforming the Punjabi landscape allows us to understand fracturing colonial land practices. Furthermore, I theorize how these colonial land practices physically enabled the Partition of British India and the subsequent challenges of displacement, nation building and evacuee property.

1. Sven Beckert, Empire of Cotton: A Global History (New York, NY: Vintage Books, 2015), 28.
2. Herodotus, The Histories, trans. Aubrey de Sélincourt, revised by John Marincola (London: Penguin Books, 2003), Book 3, 98–106.
3. Meena Menon and Uzramma, A Frayed History: The Journey of Cotton in India (New Delhi, India: Oxford University Press, 2017), 18–20.
4. David Gilmartin, Blood and Water: The Indus River Basin in Modern History (Berkeley, California: University of California, 2020), 131.

A. The top of the artifact has symbols illustrating the Indus Valley civilizations' methods of building, farming and organizing.

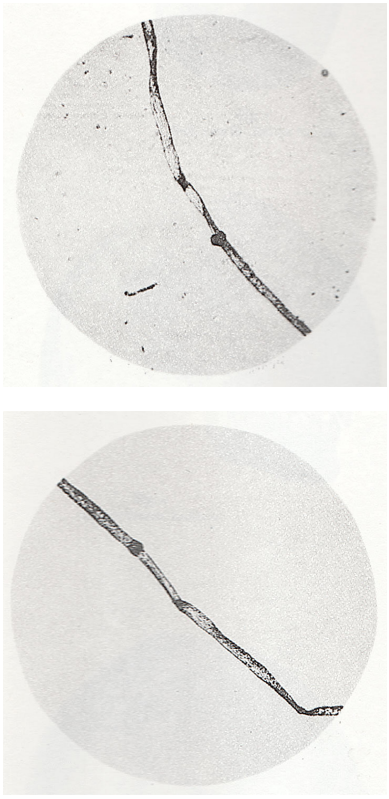


Figure 11. A small piece of cotton cloth discovered in the exacavations at Mohenjodaro. James Turner, Technological Research Labrotory of Bombay (1924).



Figure 12: Harappan stamps showing a water god (left) and indigo plant (right). Drawing by author.



Figure 13: Map of the city of Harappa. Drawing by author.

NATIVE LAND ORGANIZATION

Originally grown as a subsistence crop, *gossypium arboreum* (desi cotton) grew without much fuss in the Indus River Basin and was harvested perennially. Perennial cotton yielded long, strong, translucent fibers that were harvested, ginned, spun, and woven by hand into a strong, durable, multipurpose fabric. The properties of cotton fabric propelled its value on a global scale. Indigenous 'desi' cotton became a currency unit of trade from Brazil to Japan. On the subcontinent, Indigenous agriculturists cultivated thousands of localized subspecies over generations through careful seed selection, which enhanced properties such as texture, colour, and strength. These tall trees were grown over roughly twenty years, reaching up to eight meters in height, and producing various qualities of fibres throughout their lives. The older the tree, the thicker its bark, making it more immune to pests and drought.[5] Venetian merchant, Marco Polo recounted his experience of seeing cotton cultivation during his travels in South Asia:

"Here there is great abundance of ginger, pepper, and indigo. Cotton is produced in large quantities from a tree that is about six yards in height, and bears during twenty years; but the cotton taken from trees of that age is not adapted for spinning, but only for quilting. Such, on the contrary, as is taken from trees of twelve years old, is suitable for muslins and other manufactures of extraordinary fineness."
(The Travels of Marco Polo, Book 3, Chapter 24)[6]

For centuries, only land in close proximity to the rivers was fertile enough to consistently support agriculture. Native communities farmed for subsistence, growing enough to feed themselves, with a small margin to sell and barter with merchants.[7] One of the primary sources of income for native farming communities was cotton. Desi cotton was traditionally drought tolerant with its water needs reducing as it grew older. Compared to modern cotton farming, native farmers minimally intervened in the growth of the plant but were acutely attentive to its behaviour. They monitored individual plant's response to water, the number of bolls it yielded, size of bolls, and quality of fibres. Expertise of cultivation came in seed selection (choosing which plant's seeds to continue growing) and selective harvest (which seasons the plant's bolls should be picked, which seasons they shouldn't). Orchards of cotton, walnut, and fruit trees were grown upland surrounded by annual farming in the adjacent lowlands where the greater water availability suited the needs of annual crops such as rice, sugarcane and wheat. Crops were categorized into two growing seasons – *kharif*, before the monsoon, and *rabi*, after the monsoon, responding to the flooding cycles of the Indus River Basin.

5. Meena Menon and Uzramma, A Frayed History: The Journey of Cotton in India (New Delhi, India: Oxford University Press, 2017), 32–37.
6. Marco Polo, The Travels of Marco Polo, translated by Ronald Latham (London: Penguin Books, 1958), 260.
7. Neeladri Bhattacharya, The Great Agrarian Conquest: The Colonial Reshaping of a Rural World (Albany: State University of New York Press, 2019), 64–69.

Native land practices built on the expertise and acute perception of ancient cotton cultivators tracing back to the Indus Valley. The cotton plant was fundamental to all forms of agricultural organization and its transformation from plant to fabric could be observed within a walkable radius. This continuity of knowledge manifested in a web of hundreds of thousands of cultivators. Each farmer cultivated unique variations of cotton, building on generations of effort to create a plant that was both suitable for craftwork and beneficial to the ecosystem.[8]

As a result, cotton grew without much need of intervention and adapted into various subspecies in response to microclimates changing from town to town, region to region.[B] This reciprocal relationship emphasizes the fundamental interconnectedness between human and non-human forces. The individual configuration and maintenance of each farm resulted in slightly different ecological productions. Patterns and distinctions formed between villages as variance in soil condition and proximity to river manifested in biodiversity. This led to hundreds of diverse variants across the subcontinent, in many forms, ranging from Dhaka muslin – which was so translucent it is said a Mughal princess wearing eight layers of it was chastised for being immodestly dressed – to Gollaprolu's naturally pink cotton fibres which produced a bright fabric without the need for dye. In Punjab, the colour and thickness of cotton changed supposedly every twenty miles. Near Multan, the fibres were thick and a deep brown, compared to the north near Jhelum, where the fibres were bright white and incredibly thin yet durable. Diversity was celebrated as it added new value and knowledge to the market and fueled a lucrative textile trade across the subcontinent. With various forms of cotton serving different purposes, from garments to ship sails, local communities looked to one another to fulfill their specific textile demands, reinforcing the need for regional specificity.

The twenty-four major dialects of Punjabi illustrate the distinct cultures, lifestyles, methods of organizing which native communities developed in response to their habitat. The majority of these cultural regions were shaped by geological and ecological factors, primarily the rivers, giving the presence of 'the river' a central place in Punjabi epistemology. In his book "Blood and Water: The Modern History of the Indus River Basin", David Gilmartin outlines how this diversity was erased when Punjab's irrigation network paved the way for large-scale land redistribution and subdivision by British colonists.[9]

B. While travelling through southern Punjab, I bought various local cotton fabrics made of plants with natural hues and characteristics specific to the place. These various cottons are worked into the landscape representation of the tapestry. From Kamalia, a naturally deep brown defined the cotton plant grown in the area.

8. Meena Menon and Uzramma, A Frayed History: The Journey of Cotton in India (New Delhi, India: Oxford University Press, 2017), 32.
9. David Gilmartin, Blood and Water: The Indus River Basin in Modern History (Berkeley, California: University of California, 2020), 111–131.

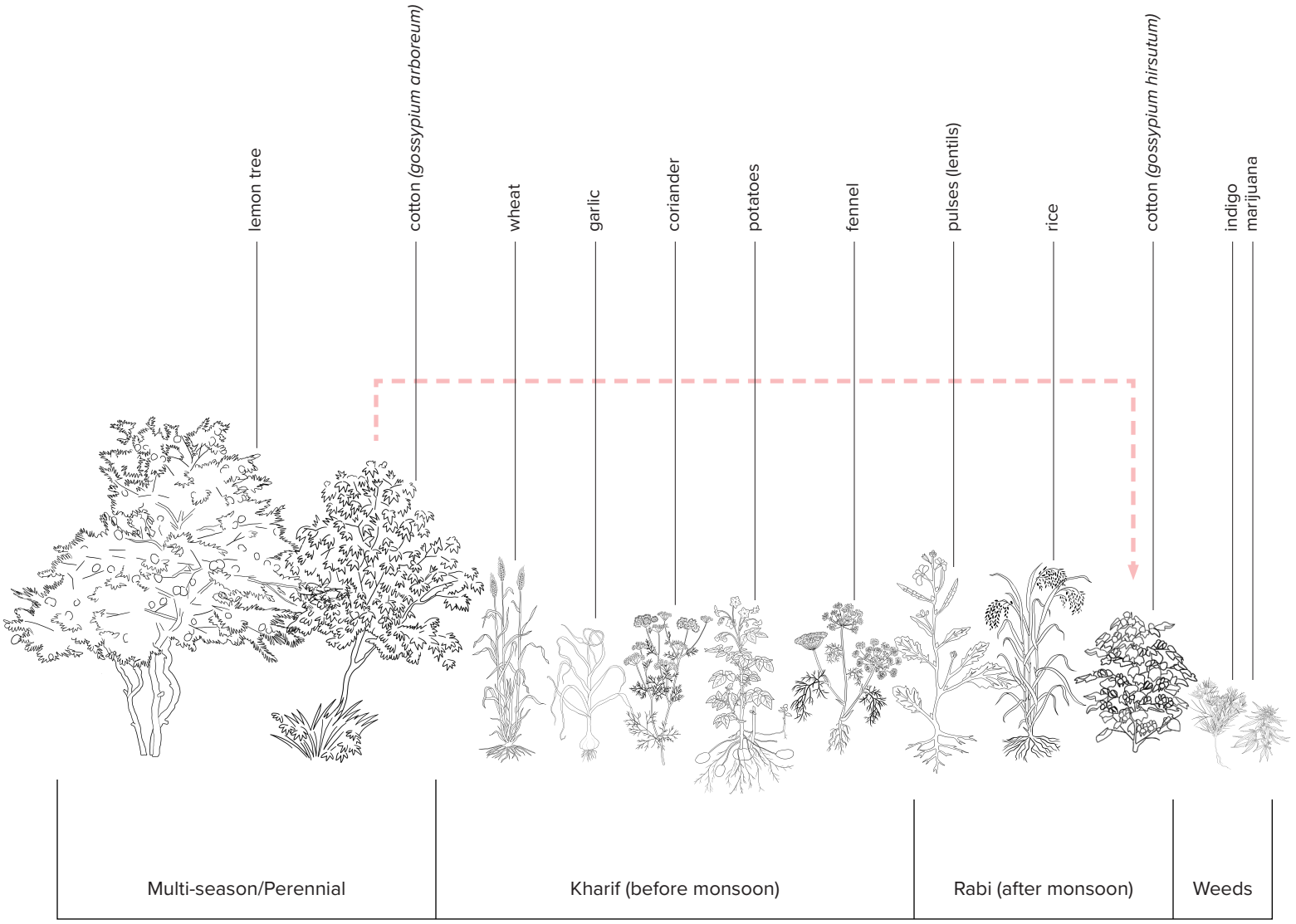


Figure 14: Diagram showing the least to most water intense crops from left to right. Drawn by author.

Under British occupation, the construction of a vast irrigation network ruptured the native landscape, reshaping it to support plantation-style agricultural systems aimed at the large-scale production of cash crops such as cotton, sugar, and wheat. In her book, "The Great Agrarian Conquest", Neeladri Bhattacharya describes how Punjab's pre-colonial rural landscape was home to a diverse range of communities from pastoral nomads to seasonal fishermen.[10] This diversity was erased when Punjab's irrigation network paved way for large scale land redistribution and subdivision by British colonists. The colonial mission for Punjab, and the Indus River Basin at large, was to make it as fertile and resource dense as Bengal, which was situated in the Ganges Delta, one of the most fertile regions in the world.

As the British began occupying Punjab in 1849, they first started with surveying and reorganizing the land. The site was amalgamated with tracts of colonized land from the north and east including the Delhi Territory. Once mapped out, the province was subdivided into twenty-nine districts, which were further subdivided into three to seven 'tehsils' each. The final colonial form of Punjab had an area of 357,000 kilometers square, with a population of roughly twenty-eight million people.[11C] In the *Chenab Colony Gazetteer*, the official administration of Lieutenant Governor Aitchison published a press release outlining their scheme to build an extensive canal network and allocate property alongside it for agricultural development.[12] Two explanations for the scheme were outlined in the paper:

C. Roughly the same size as modern day Germany.

(1) To relieve the pressure of population upon the land in those districts of the Province where the agricultural population has already reached or is fast approaching the limit which the land available to agriculture can support and;

(2) to colonise the area in question with well-to-do yeomen of the best class of agriculturists, who will cultivate their own holdings with the aid of their families and the usual menials, but as much as possible without the aid of tenants and will constitute healthy agricultural communities of the best Punjab type.

The Sidhnai and Sohag Para Colonies were the first to be constructed and populated along two major irrigation canals, one running between the Indus and Chenab Rivers, and the other running between the Ravi and Sutlej.

Between the two canal colonies, more than 250,000 acres of land was allocated to around three thousand settlers. The government prioritized granting land to settlers from Punjab's most populous districts of Lahore, Amritsar, Gurdaspur, Hoshiarpur, Jallandar and Ferozpur.[13] Where urban plight in dense Punjabi cities made British officials uncomfortable, they saw the potential to churn a skilled farming class to cultivate millions of acres.



Figure 15. Jalal al-Din Khwarazm-Shah crossing the Indus River to escape Chinggis Khan and his army. Illustration from the Jami' al-Tawarikh by Rashid al-Din. Wikimedia Commons.

10. Neeladri Bhattacharya, The Great Agrarian Conquest, 87–89.
11. Anshu Malhotra and Farina Mir, eds., Punjab Reconsidered: History, Culture, and Practice (New Delhi: Oxford University Press, 2012), 11–13.
12. Chenab Colony Gazetteer (1904), p.29.

The state encouraged wealthy peasantry to purchase land and self-cultivate it, hoping that the colonies' success would elevate Punjab's crop production and the economic standing of the peasant class, consequentially producing more loyal subjects to the Crown. The first settlers in the Sidhnai and Sohag Para colonies were Sikhs from Amritsar, of the Jatt peasant caste. After a handful of successful harvests, canal colony land rapidly appreciated in value as it became highly sought after. The Jatts, historically a peasant farming caste, elevated to influential landowners.[14] As their property became more valuable, early canal settlers began procuring more land and leasing to subtenants, an outcome overlooked in the initial state scheme. The value of canal land created a demand to further expand the irrigation network.

When the American Civil War created a global cotton shortage, Britain began large-scale cotton cultivation across British India.[15] Perennial desi cotton was incompatible with machinery, while its annual variety produced few bolls with short, thick fibers, making it unsuitable for industrial plantation farming. To ensure all cotton being exported to English mills was machine friendly, the colonial institute of the Indian Central Cotton Committee outlawed the commercial sale of raw desi cotton. In addition to creating the need for pesticides, American cotton was problematic to grow in provinces such as Punjab and Sindh where the hot arid landscape did not provide enough moisture and shade.[16] Where desi cotton grew independently for millennia with little intervention, American cotton required constant agricultural interference in the form of irrigation, pesticides, tilling and sowing. Being more water intensive than desi cotton, its success was intrinsically linked to the engineered irrigation network.

The irrigation network imposed agrarian monoculture onto a diverse array of communities to produce a space for colonial economic interests. The motivation for canal building was clear and stated from the start: "to colonize."[17] Canalization and colonization went hand in hand to transform non-agrarian central Punjab into an agricultural asset for the British Empire. Referred to by the state as "the wastelands of Punjab", the Doab, a distinct landscape within historic Punjab consisted of vast arid pasturelands between two rivers.[18] This land was home to various pastural communities which herd livestock across the plains in cycle with the river floods. While these communities existed across the Doab, the colonial state considered the land "uninhabited" and sought to populate it through agriculture. When people resisted displacement, they were arrested, killed and forcefully removed from the land with their villages destroyed. The state labeled them "uncivilized savages in the way of progress" – enemies of the environment.

The colonial attitude towards land saw resource production and extraction as the cornerstone of occupation and ownership. In the British



Figure 16. "Old Photo Showing Lahore Canal" Photograph by History of Pakistan. Flickr. Accessed November 28, 2024. https://www.flickr.com/.

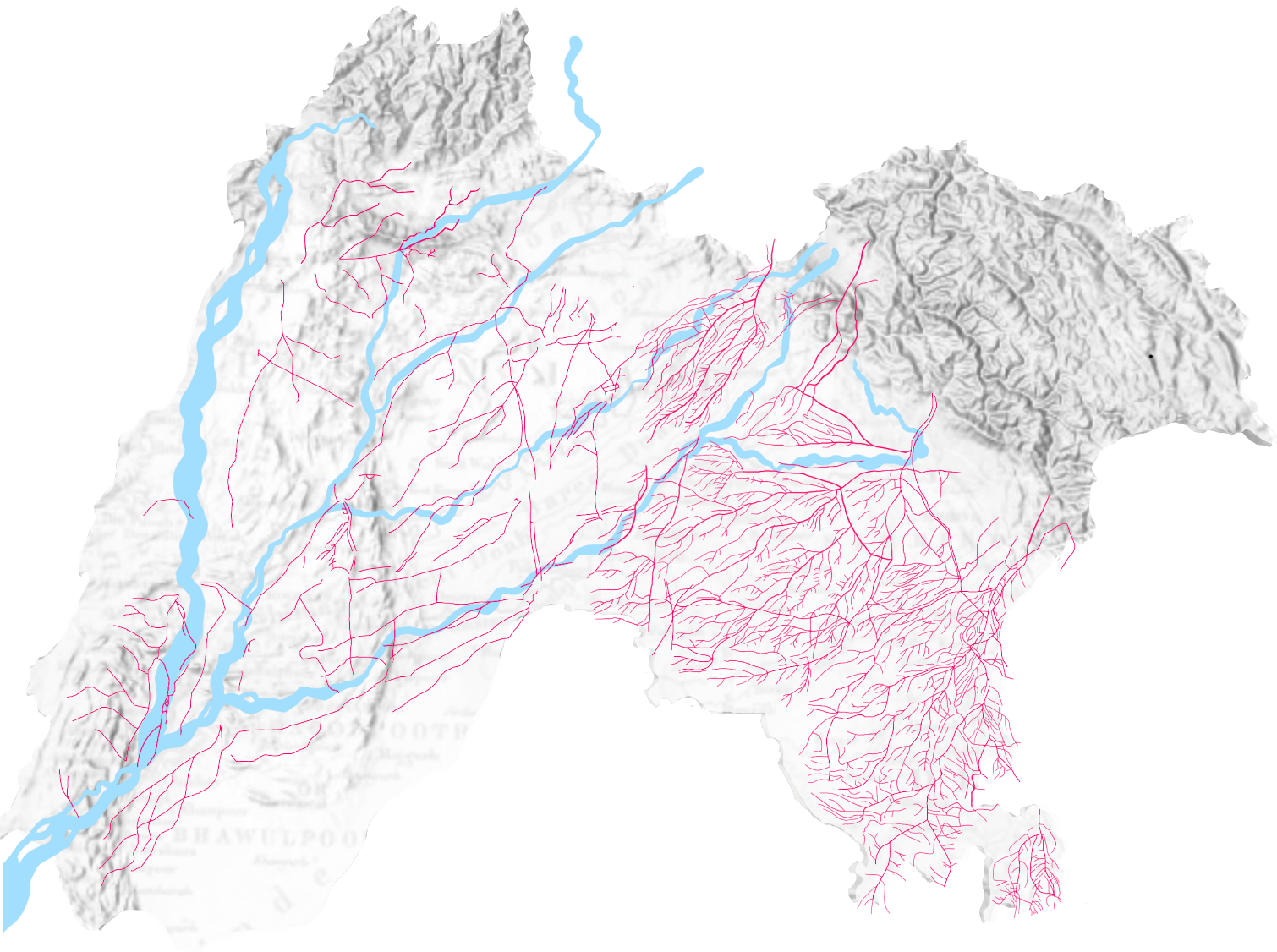
13. Haines, Daniel. "Constructing State Power: Internal and External Frontiers in Colonial North India, 1850s–1900s." Environmental History 20, no. 4 (2015): 645–70. http://www.jstor.org/stable/24690818.
14. Anshu Malhotra and Farina Mir, eds., Punjab Reconsidered: History, Culture, and Practice (New Delhi: Oxford University Press, 2012), 154.
15. Sven Beckert, Empire of Cotton: A Global History (New York, NY: Vintage Books, 2015), 304–316.
16. Neeladri Bhattacharya, The Great Agrarian Conquest, 99.
17. Chenab Colony Gazetteer (1904), p.29.
18. Neeladri Bhattacharya, The Great Agrarian Conquest, 448.

conscience, colonial engineers were viewed as "environmentalists" and their irrigation project was widely believed to be an act of salvation and utilitarian good as it was promised to bring prosperity and opportunity to the empire and its citizens.[19] The title of environmental advocates and stewards was granted because environmentalism at the time framed optimized cultivation and resource output as ecological and environmental salvation. Prosperity meant economic gain for England and its citizens, with little thought given to Punjabi natives and their livelihoods. If a population was not productively using their land, the British imperial gaze considered the land to be unoccupied and refused to recognize those people as equally capable of owning land or deserving of sovereign land rights. Through the imperial concept of terra nullius British colonists positioned themselves as regulators of the land's development, signaling their control over the evolution of the territory as a whole.

By the end of the nineteenth century, the only means of rural organization was expected to be agrarian. Non-agrarian Punjabi communities were pushed to the fringes of society. They were not recognized as citizens of British India under the crown, inadequately accounted for in land surveys and censuses, and excluded from the province's socio-economic fabric by way of road and railway construction which saw their land either bypassed, destroyed or fractured.[20] As environmental transformation swept the province, the native attitude towards land occupation shifted and agriculture was planted at the heart of Punjabi identity. This transformation into an agrarian focused society was heavily impressionable on Punjabi oral tradition and collective conscience. Nineteenth and twentieth century literature emphasized agriculture as the soul of Punjabi identity, using farming as an allegory for a hardworking life fulfilled by service.

Around the mid-twentieth century, central Punjab began experiencing steady crop failures.[21] This came after a rigorous war effort pushed the majority of Punjabi farmers to grow cash crops such as wheat and cotton incessantly for years. The soil's nutrients had greatly depleted and low biodiversity bore powerful parasites. This once productive, manufactured agricultural landscape grew ineffective and barren, leaving the farmers and labourers who tended to it all but bones. Millions of people died in regional famines, while others who struggled to buy clothing for their families, died from cold.[22]

19. Fatima Anwar, "Land Theft as Colonial Legacy in Pakistan," The Funambulist Magazine, August 31, 2021.
20. Neeladri Bhattacharya, The Great Agrarian Conquest, 97–101.
21. Shinder S. Thandi, Agrarian Reform and Farmer Resistance in Punjab: Mobilization and Resilience (Milton Park, Abingdon, Oxon: Routledge, 2023), 32.
22. Yasmin Khan, The Great Partition: The Making of India and Pakistan (New Haven, CT: Yale University Press, 2017), xxvi.



N

Figure 17: Punjab irrigation network imposed on topographic map. Drawing by author.

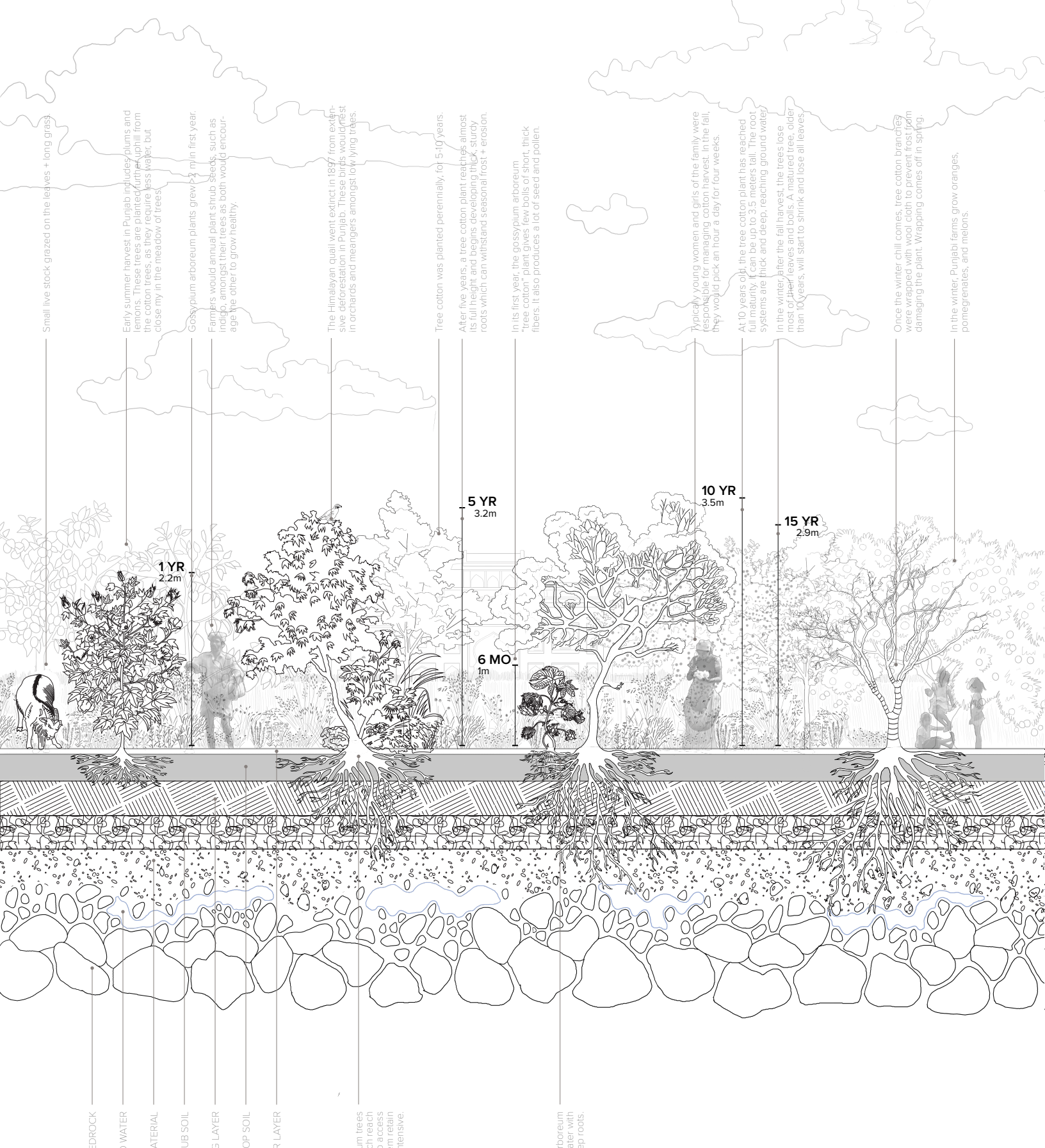


Figure 18.1 Pre-colonial and colonial cross section of cultivation methods. Drawn by author.

CROSS SECTION OF PRE-COLONIAL PUNJABI COTTON FARMING

16th century AD to 1850s

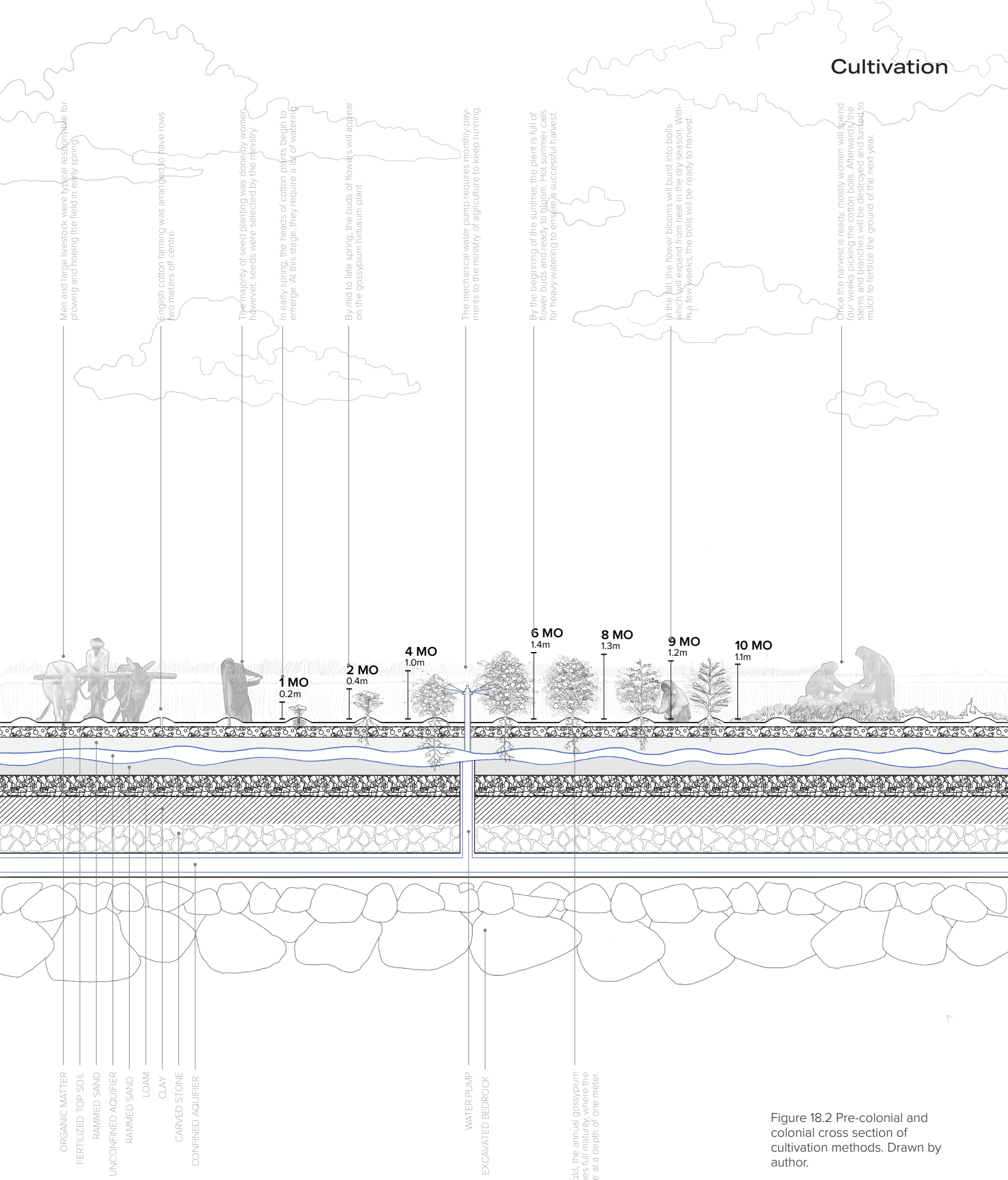


Figure 18.2 Pre-colonial and colonial cross section of cultivation methods. Drawn by author.

CROSS SECTION OF COLONIAL PUNJABI COTTON FARMING

1880s to 1947

Fracturing colonial land practices came to a head in 1947, when the province was partitioned into two separate territories in order to create the nation-states of India and Pakistan. This division not only redefined political boundaries but also further fragmented Punjab's socio-ecological landscape, intensifying the long-term environmental and cultural impacts initiated by colonial land practices.

By 1947, there were twenty-six million acres of irrigated land in the Indus River Basin and 3,000,000 Punjabis dead in two years from widespread, policy-induced famine.[23] The British Empire's thirst for cotton became so insatiable at the height of the Second World War that famine was declared an epidemic in Bengal and Punjab as farmers were forced to grow cotton and jute instead of rice, produce, or wheat to fill the quota of packaging and uniforms for the British Armed Forces.[24]

Both the urban working and rural farming classes of Punjab faced widespread destitution. Desperation gave way to violent confrontation, both against the state and amongst the community. The religiously diverse community of Punjab imploded upon itself as identity politics fractured neighbourhoods, households and families. The province became ground zero for both ideological and territorial confrontations. Once it became clear that a united Punjab was unlikely, province-wide communal violence broke out. Religiously incited militant mobs of Hindus, Muslims and Sikhs wiped out entire neighbourhoods of people whose religious identity differed from theirs in hopes of changing the region's demographic makeup enough to bend the border. Homes, businesses, neighbourhoods and markets were razed.

Two weeks before the given date of August 15th, 1947, Sir Cyril Radcliffe, a civil judge from England was flown to Delhi with the task of decoding census data and drawing a reasonable border to partition British India and a handful of its two hundred and sixty princely states into two sovereign countries.[25] British lawmakers intended for the majority of Muslims to be on one side of the line while the majority of everyone else would be on the other. Radcliffe's task was knotted with many social, infrastructural, and economic obstacles concerning the intertwined nature of Muslim and Hindu life. While Radcliffe and the Border Commission remained occupied with untangling a dividing line which would best reflect the religious divide imposed on the region, they neglected to consider the ethnic, geographic, hydrological or infrastructural reality of partition. The proposed border was drawn through villages, glaciers, neighbourhoods, and islands, across and along rivers, with undefined fragments lingering in princely states. It haphazardly divided the world's largest irrigation network, largest non-polar glaciers, most fertile river delta, railway and road systems spanning millions of square kilometres – in addition to five hundred million people.[26]

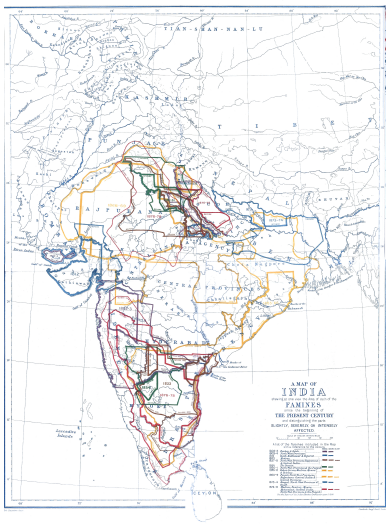


Figure 19. Map of major famines in India during British rule, (1765 – 1947). Wikipedia, "Timeline of Major Famines in India During British Rule," accessed December 26, 2024, https://en.wikipedia.org.

23. Gayatri Chakravorty Spivak, "Can the Subaltern Speak?" in Marxism and the Interpretation of Culture, ed. Cary Nelson and Lawrence Grossberg (Urbana: University of Illinois Press, 1988), 271–313.
24. Chandra, Bipan. "Colonial India: British versus Indian Views of Development." Review (Fernand Braudel Center) 14, no. 1 (1991): 81-167. http://www.jstor.org/stable/40241206.
25. Yasmin Khan, The Great Partition: The Making of India and Pakistan (New Haven, CT: Yale University Press, 2017), 3.

By August 1947, millions of people were moving across Punjab, leaving their homes behind, never to return. An estimated fifteen million acres of land were abandoned on either side of the Punjab border.[27] Entire neighbourhoods across towns and cities cleared out as Sikhs, Hindus, and Muslims became refugees in their own territory. The majority of migrants fleeing to East Punjab (India) were Sikhs and Hindus, who unlike their Muslim counterparts, were landowners. The Muslims who migrated to West Punjab (Pakistan) were largely of the peasant and working class and owned less than half the acreage of land their Sikh and Hindu counterparts were leaving behind. Out of the 15,000,000 acres of land abandoned by migrants on either side of the border, coined "evacuee property", roughly 10 million of these acres belonged to land-owning Sikhs and Hindus who fled to India.[28] On August seventeenth, the Punjab Border Committee revealed the official, British-approved borderline which ran through the middle of Punjab, along the Ravi and then the Sutlej. It divided historic Punjab into West Punjab for Pakistan and East Punjab for India. East Punjab went on to be further partitioned in 1966 to form the states of Himachal Pradesh, Punjab and Haryana.[29]

The legacy of colonial land theft pervades in Pakistan (and India) today, particularly in West Punjab. Within the weeks following Partition, much of the abandoned property was occupied by local gangs, paramilitary groups and even neighbours. As the government, army, and constitution of Pakistan took shape, a relic of colonial land theft persisted in the enactment of the Land Acquisition Act of 1894, which stated "land may be acquired by the central authority for a public purpose as well as for companies."[30] By the 1950s, virtually all of the evacuee property abandoned by migrants was seized by the Pakistani government, army, and other parties.

In the case of India's evacuee property, there was not enough land to recompense all the migrating *zamindar*. This led to widespread land disputes, violent conflict, and labour exploitation of migrants. The Land Acquisition Act of 1894 was utilized by the Indian government in 1966 to lead a wide scale redistribution of land in East Punjab.[31] The state was subdivided into three separate states – Punjab, Haryana and Himachal Pradesh. In addition to the subdivision, the majority of rural land was claimed by the government and redistributed in efforts to settle migrant land disputes. This redistribution was done based on caste, religion and documented proof of significant ownership of agriculturally-viable land. In many cases, higher caste and large scale farmers were rewarded with more land, while many small scale farmers saw their land shrink. Lower-caste individuals, religious minorities and women were denied any right to ownership.[32]

26. Yasmin Khan, The Great Partition: The Making of India and Pakistan (New Haven, CT: Yale University Press, 2017), 105–107.
27. Schechtman, Joseph B. "Evacuee Property in India and Pakistan." Pacific Affairs 24, no. 4 (1951): 406-13. http://www.jstor.org/stable/2753454.
28. Chattha, Ilyas. "Competitions for Resources: Partition: Evacuee Property and the Sustenance of Corrup tion in Pakistan." Modern Asian Studies 46, no. 5 (2012): 1182-1211.
29. Majeed, Akhtar. "The Changing Politics of States' Reorganization." Publius 33, no. 4 (2003): 83-98.
30. Fatima Anwar, "Land Theft as Colonial Legacy in Pakistan," The Funambulist Magazine, August 31, 2021.
31. Bina Agarwal, A Field of One's Own: Gender and Land Rights in South Asia (New Delhi: Cambridge University Press India, 2008), 4–6.

In 2021, the Pakistani government employed the Land Acquisition Act to seize more than 100,000 acres of land from farming villages along the Ravi River. Land expropriation of this nature is not new to Punjab. Since the 1990s, agricultural land owned by small farming communities is being declared barren (terra nullius) in order to be acquired at criminally low rates for the sake of "national development". Much of this land is "handed over to private developers who stand to make billions off housing schemes for the urban upper and upper-middle classes".[33] Land not used for housing schemes has been given to large scale farming corporations to cultivate cash crops, such as cotton and sugarcane, through environmentally exhaustive practices.

Today the colonial legacy of fracturing land practices lives on as the irrigation network has chaotically and haphazardly been expanded to further push Punjab's soil to the brink of cultivation. Fractured by an imposed, military border, Punjab's irrigation network is failing. In 2022, unprecedented flooding in Pakistan during the monsoon season saw the canal system become the setting of a nightmare as it invited polluted, toxic water into every Punjabi city, village, and farm. Nearly 8,000,000 people were displaced due to the climate catastrophe, echoing a grim reminder of Partition and Punjab's colonial past, present and perhaps, future.[34]

32. Bina Agarwal, A Field of One's Own, 41.
33. Fatima Anwar, "Land Theft as Colonial Legacy in Pakistan," The Funambulist Magazine, August 31, 2021.
34. Tunio, Zoha. "After Unprecedented Heatwaves, Monsoon Rains and the Worst Floods in Over a Century Devastate South Asia." Inside Climate News, August 2, 2022. https://insideclimatenews.org/.

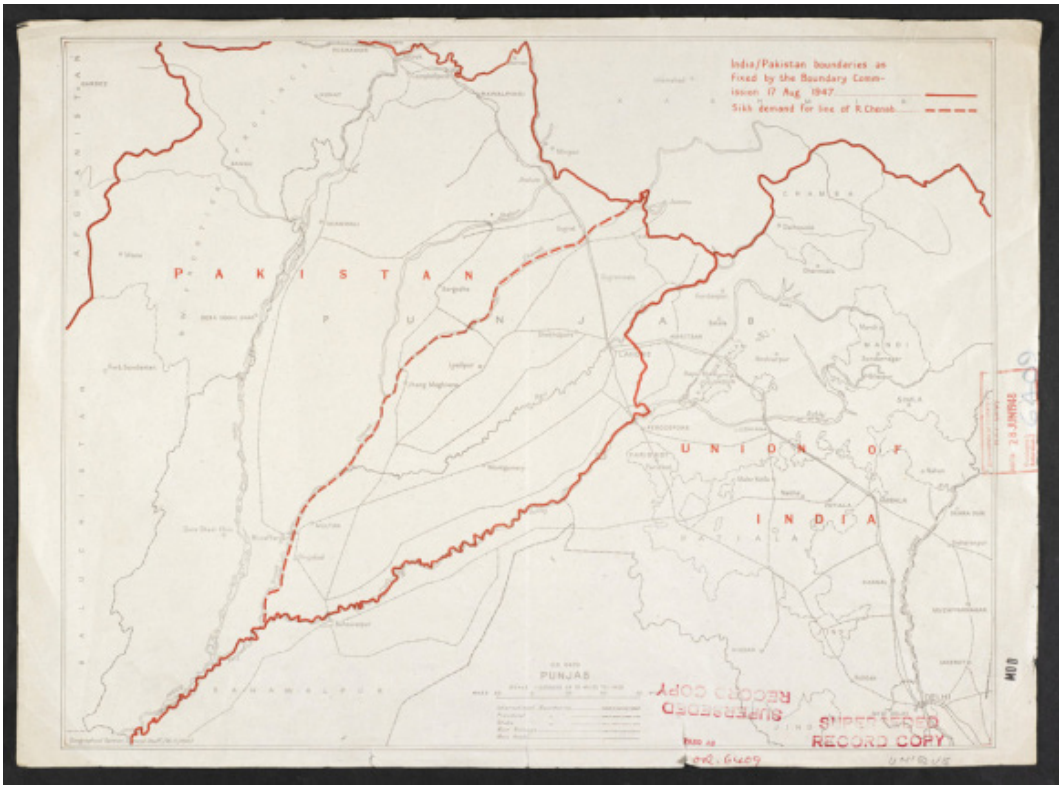


Figure 20. Map of India/Pakistan Boundaries as Fixed by the Boundary Commission, 17 August 1947.

London: War Office, 1947. Cartographic Items Maps MOD OR 6409, British Library.

TODAY'S FABRIC & LAND

The tension between indigenous and colonial land practice is felt in the very fabric of my textile artifact. Made with cotton thread and fabric of either desi or American cotton, the material differences highlight the varying priorities in each plant. Through the nature of stitching, dyeing, printing and embroidery, each fabric's transformation highlights the communal values reflected in the ecological material of their environments. Where previously there had been thousands of cotton species, it is difficult to find anything other than American cotton, consistent, uniform product.

The cotton from which the artifact was made is farmed arduously in Pakistan and India today. While cotton remains one of the most highly valued crops in both countries, the financial risk in growing cotton is insurmountable and its cultivation drains the land of nutrients. Heavy irrigation often leads to parasitic bacteria developing in the soil, which makes growing indigenous produce – which is suited to dry, well-drained soil – such as fruits and vegetables nearly impossible. Without regular crop rotation in addition to heavy pesticide use, the tested quality of soil has severely diminished across cotton growing districts in India and Pakistan, while the toxic content of ground water has increased. Increased toxins in water not only corrupt the soil but have been shown to adversely impact the health of livestock, local ecology's flora and fauna, and the general community. Additionally, due to increased flooding and lack of genetic biodiversity, bollworm can take up to 75% of the season's yield.[35]

Referencing Henri Lefebvre's concept of "production of space," the process of surveying and subdividing the land materialized in the physical reality of the irrigation network, rendering the landscape an asset of empire.[36] This resulted in the disruption of the Indus River Basin's natural flooding cycles and consequently the entire foundation of Punjab's ecology. Additionally, colonial powers systematically marginalized and devalued native knowledge systems by displacing traditional forms of women's labor with industrialized factory production. This shift not only disrupted the social and economic roles of women within indigenous communities but also eroded the intergenerational transmission of skills and knowledge integral to local cultures. By prioritizing mechanized production, colonial policies imposed a homogenized, profit-driven framework that further alienated native practices from the emerging colonial economy, reinforcing systems of dependency and cultural loss.



Figure 21. Capture of Aliwala. National Army Museum. Major-General James Scarlett, 1855.

Stipple engraving by Francis Grant after F. Bromley. Published by S. W. Fores, 1858. Accession Number: 1974-12-17-1. National Army Museum, London. Accessed November 28, 2024. https://collection.nam.ac.uk/.

35. Singh, Navsharan. "It's Apathy Which Killed Them: Remembering India's Kisans" Beyond the Pandemic: Leaving No One Behind. Sustainable Development Policy Institute, 2022. http://www.jstor.org/.
36. Henri Lefebvre, The Production of Space, trans. Donald Nicholson-Smith (Oxford: Blackwell Publishing, 1991), 282–292.

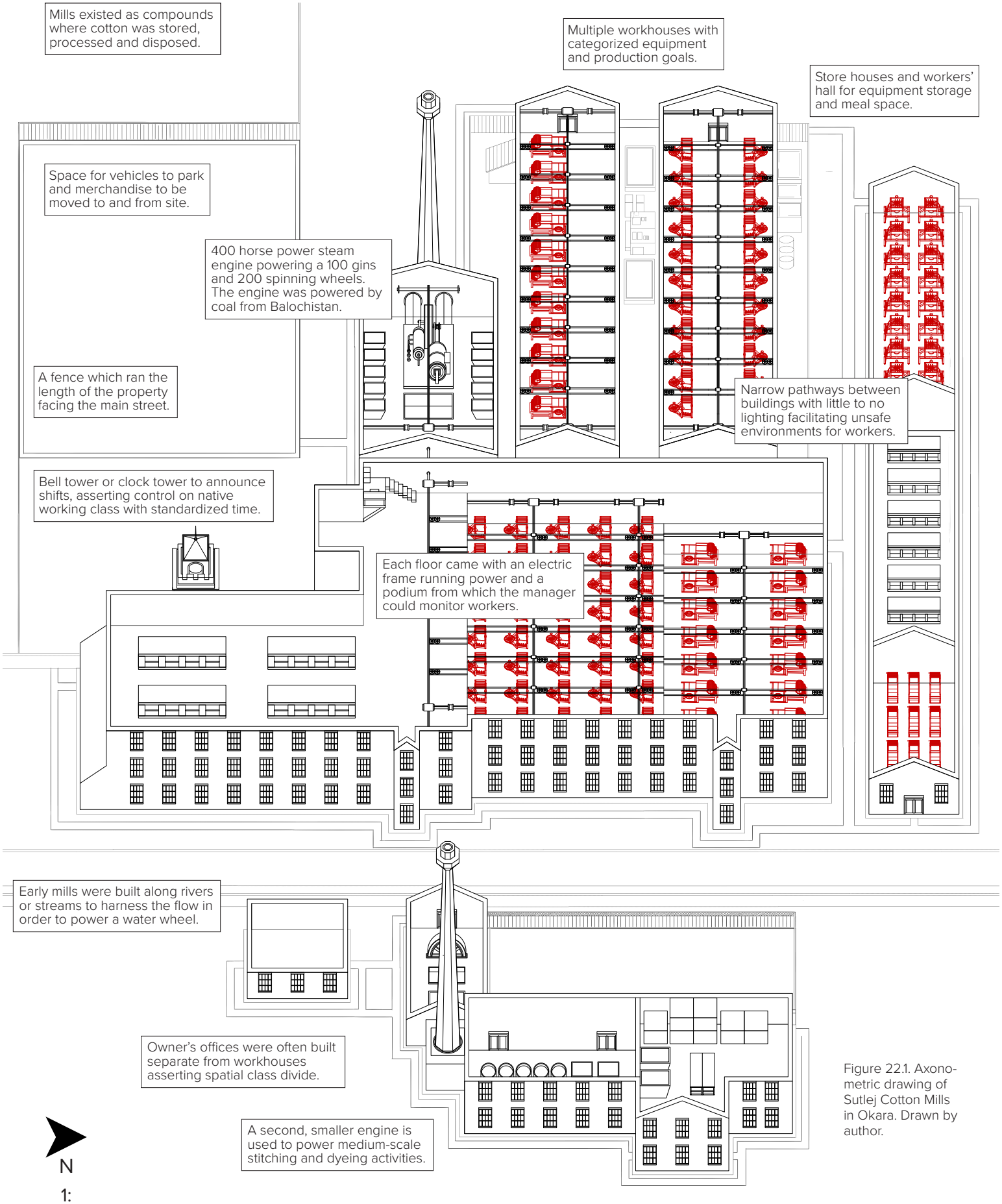
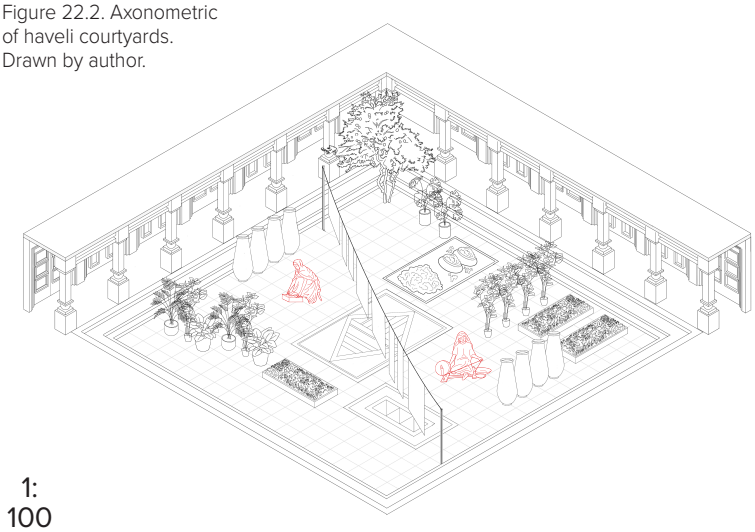


Figure 22.1. Axonometric drawing of Sutlej Cotton Mills in Okara. Drawn by author.

Figure 22.2. Axonometric of haveli courtyards. Drawn by author.



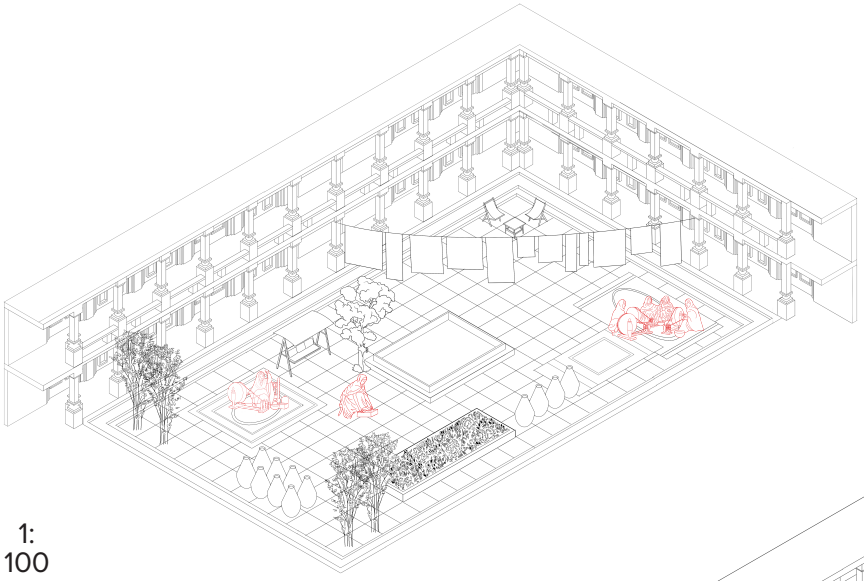
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Small Haveli Courtyard in Autumn

In October, the cotton harvest will occur as bolls bloom over four to six weeks and harvesters pluck them for textile use periodically every two to four days.

During these days – the haveli (home) courtyard will be used for drying, storing, ginning and spinning. Hot dry afternoons are preferred over the foggy mornings for ginning, so the dry air helps separate the fibers easily.

The courtyard includes – space to grow herbs (coriander + mint), plants, grain storage, a generational fruit tree (guava), furniture, space to dry garments, carpets (cleaning, old), mortar and pestel (to churn spice), madhani (lassi churner), stove



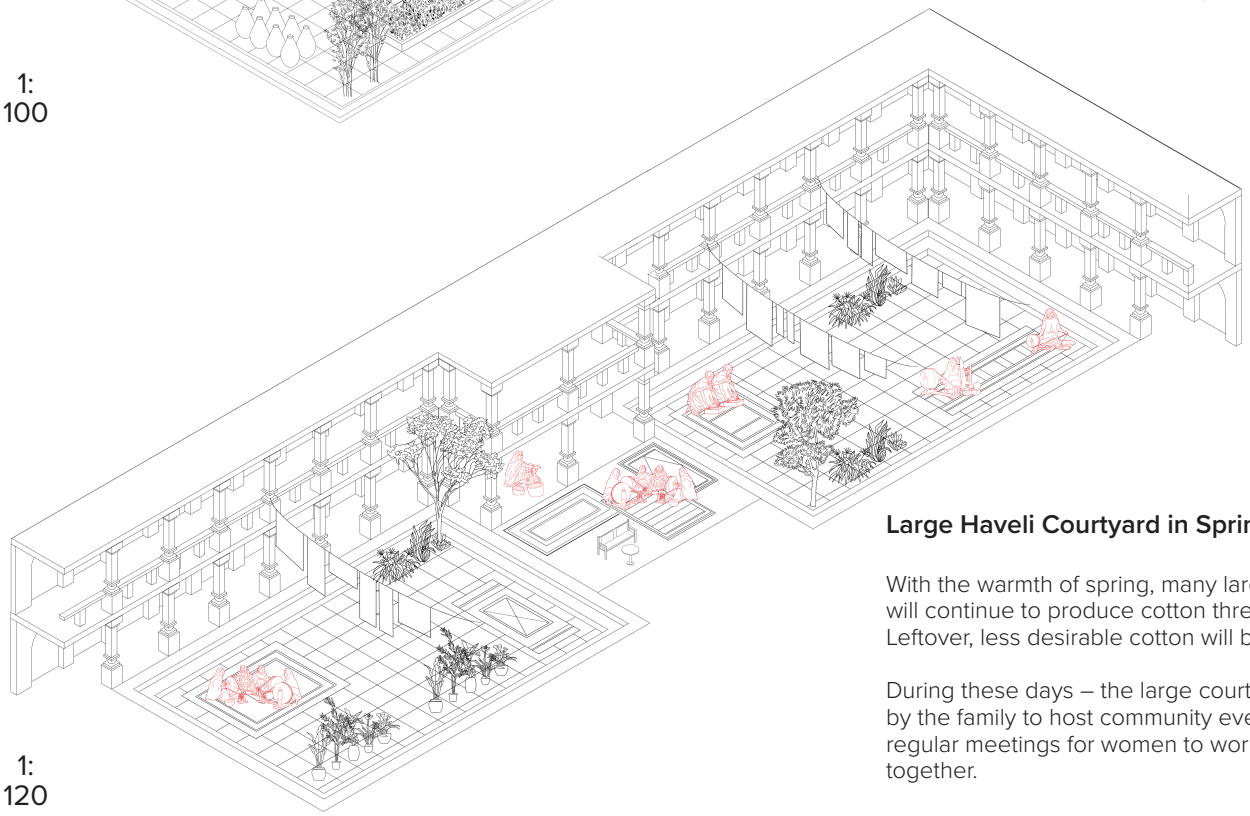
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Midsize Haveli Courtyard in Winter

Winters typically bring festivals and weddings which become celebratory nodes within the community's collective temporality around which they gather. For women, this meant dedicating significant time to crafting textiles. Winter afternoons are moments for collaborative work and community building.

During these days – the courtyard will be used to family gatherings, to spin thread and embroider, rest

In addition to the previous courtyard, this includes: a fountain, a swing, two storeys (balcony access)



1:
120

Large Haveli Courtyard in Spring

With the warmth of spring, many large households will continue to produce cotton thread and textiles. Leftover, less desirable cotton will be used for quilts.

During these days – the large courtyard will be used by the family to host community events including regular meetings for women to work on textile crafts together.

Courtyard Production: Pre-Colonial Cotton Processing

Ginning + Spinning – Industrialization of Home Economies *(1890 to 1930)*

MERA AE CHARKHA NOULAKHA

"The spinning wheel of love,
the unspun balls of grief
The more I spin them,
the more they seem to double

My spinning wheel is priceless,
as I spin, so my love grows stronger,
And at every turn of the wheel,
I remember you." [1]

Seventeenth century Sufi poet, Bulleh Shah's poem Mera Ae Charkha Noulakha (My Spinning Wheel is Priceless)[1] takes on the voice of an unnamed Punjabi woman singing as she spins cotton thread.The repeating verse establishes the spinning of thread as an allegory for grieving a loved one. The narrator implies she fills her time with spinning to keep busy in the absence of her beloved. Sitting in a courtyard, the seasons pass her by, but the constant spinning of her charkha maintains the hope of her loved one's return. The spinner pleads through verse, "Come back to the courtyard, to this one who longs for you. My spinning wheel is colourful, it is the vehicle of your remembrance. The strands of sorrow seem to have no end, and as I spin, they double."[2]

Bulleh Shah's poem signals the presence of women in Punjab's cotton processing methods, particularly at the stages of ginning and spinning. Punjabi women, traditionally the primary overseers of indigenous ginning and spinning practices, were systematically marginalized from cotton production under the colonial restructuring of the industry. The introduction of factory-based production systems not only displaced their expertise but also severed their deep, intergenerational connection to the craft. By imposing a mechanized and profit-driven framework, colonial authorities replaced localized, community-centred production processes with large-scale industrial typologies that prioritized efficiency over sustainability and craft. This alienation marked a significant disruption of the gendered labor dynamics in Punjab, eroding the autonomy and agency of women within the textile economy and contributing to the broader disempowerment of indigenous knowledge systems under colonial rule.

At a smaller scale of analysis than the first chapter, this chapter utilizes the architectural and urban scale to investigate and compare the village and the factory as typologies of production. Focusing on the translation of the English factory to Punjab, the time period of analysis is from the 1890s to the 1930s, when gins were rapidly being constructed across the province.[3]

1. Bulleh Shah, Mera Ae Charkha Noulakha, in Sufi Lyrics, trans. and ed. Christopher Shackle (Cambridge, MA: Harvard University Press, 2015).
2. Bulleh Shah, Mera Ae Charkha Noulakha, in Sufi Lyrics, trans. and ed. Christopher Shackle, (2015).
3. Gayatri Chakravorty Spivak, "Can the Subaltern Speak?" in Marxism and the Interpretation of Culture, ed. Cary Nelson and Lawrence Grossberg (Urbana: University of Illinois Press, 1988), 271–313.

Beginning with the tools of *charkha* and *charkhi*, I will explore the organization of native spaces dedicated to ginning and spinning, highlighting the role of women as key leaders and producers in these processes. Then we will be able to understand how British colonial interests sought to undermine the native cotton industry through foreign trade policies and the mechanization of processing tools. Finally, the study will analyze the transplantation of English factory systems into the Punjabi countryside, emphasizing how these structures were not merely economic innovations but deliberate tools of colonial control and domination.

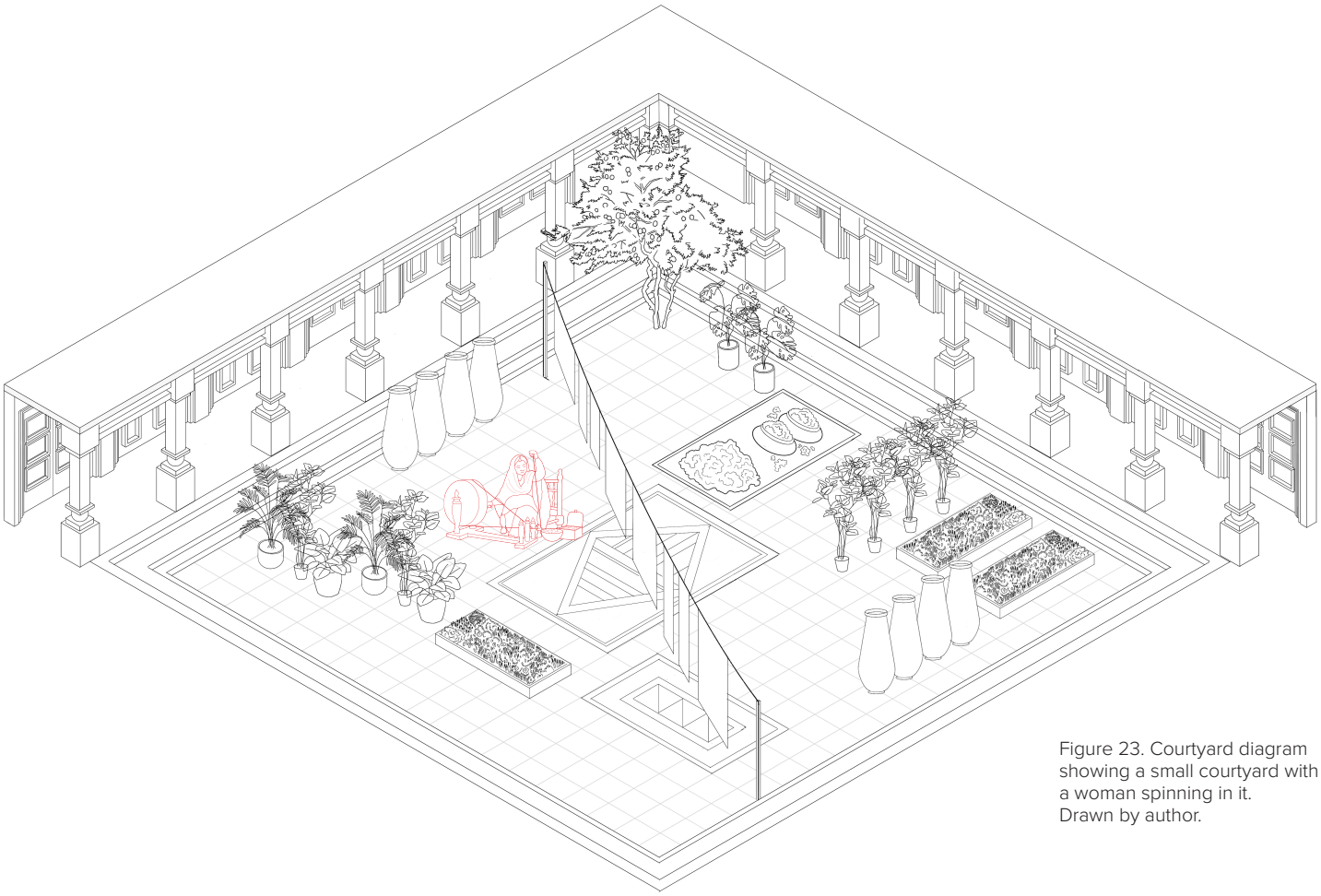


Figure 23. Courtyard diagram showing a small courtyard with a woman spinning in it. Drawn by author.

WOMEN'S WORK IN A GLOBAL ECONOMY

Before the nineteenth century, the process of cotton production in Punjab—from harvest to thread—was deeply embedded in the labor and expertise of women. This gendered division of labor positioned women as the primary custodians of cotton's lifecycle, encompassing ginning, spinning and ornamentation. Through an intricate network of hundreds of thousands of small cotton farms, millions of households spinning yarn and weaving cloth, and the exchange of goods at local, periodic markets, the indigenous cotton textile industry produced enough fabric to meet both domestic needs and global demand. These matriarchal structures facilitated intergenerational knowledge transfer and maintained community-centric modes of production, ensuring sustainability and resilience within the cotton industry. By anchoring global trade networks in domestic spaces, women in Punjab played an instrumental role in shaping the socio-economic fabric of the region while fostering a textile economy that extended across the world.[4]

The pre-colonial method of textile production in Punjab kept the growing and processing of cotton close to one another, with members of the same family, household or village engaging with the plant in its transformation from seed to yarn. Desirable cotton processing hands were delicate, gentle, small and precise in order to pick bolls, remove lint from seed, and spin thin yet uniform yarn, all without breaking the fibres, the most vital step in assuring high quality textiles. As women's work, raw cotton was picked, ginned and spun by women and girls of the family. Though they varied in shape, size and material, the *charkha* (spinning wheel) and *charkhi* (gin roller) were hand tools found in virtually every household.[5] In Punjabi, both tools are described with the masculine and feminine terms of the same word – charkh, which translates to wheel. In this word, the stages of ginning and spinning are synthesized through the unifying motion of a rotating wheel.

They processed the cotton at home, usually in outdoor spaces such as a communal courtyard, veranda, or garden.[6] The courtyard offered a flexibility of private and public space, allowing women to extend their reach beyond the domestic and simultaneously bring the public realm into their homes. By collecting in communal outdoor spaces, these women assured quality control in one another's work and used climate to their advantage. Humid days were best for spinning as fibres were more inclined to stick together; small amounts of rainwater or mildew were used to seal yarn; the sun was used to dry lint, and shade was used to cool it.

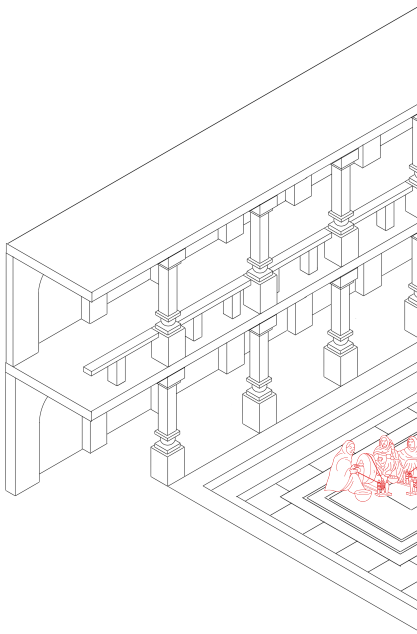
4. Meena Menon and Uzramma, A Frayed History: The Journey of Cotton in India (New Delhi, India: Oxford University Press, 2017), 46.
5. Mukund, Kanakalatha. "Indian Textile Industry in 17th and 18th Centuries: Structure, Organisation and Responses." Economic and Political Weekly 27, no. 38 (1992): 2057–65. http://www.jstor.org/
6. Michelle Maskiell, "Embroidering the Past: Phulkari Textiles and Gendered Work as 'Tradition' and 'Heritage' in Colonial and Contemporary Punjab." The Journal of Asian Studies 58, no. 2 (May 1999): 361–88, https://doi.org/10.2307/2659401.

The partially enclosed nature of courtyards and gardens protected the delicate work from wind.[7] These spaces of production created safe and empowering social environments for women and girls where they engaged in identity and culture building. While these spaces were not completely devoid of men, they were managed and organized by women, further emphasizing the influence and agency women established through textile production.

Contextualizing these spaces through the lens of ecofeminism reveals the historic role native women have played in maintaining economies of circularity.[8] As the harvesters, ginners and spinners of cotton, women developed an intimate intergenerational understanding of seeds, fibres, plants and bolls, and connected cotton ecosystems through their roles in agriculture and fabric production. The proximity of production processes intrinsically linked systems of knowledge to one another. Within the feminist framework of production, the wellbeing of the family and the home preceded that of the market, or the global economy, ensuring community and environmental health was prioritized over profit driven motives.

In the programming of vernacular Punjabi homes, the domestic realm was not separate from spaces of work or production, which allowed cotton to be handled by those who had stake in its ecological and material wellbeing. The central courtyard as a flexible space of gathering blurred the boundaries between living, labour and craftsmanship. The integration of production within the domestic sphere elevated cotton beyond a commodity to a material deeply embedded in the rhythms of daily life. Additionally, the shared spaces within these homes fostered intergenerational transmission of knowledge, as the architecture supported collaborative work and communal living. Punjabi *havelis* (courtyard homes), as a vernacular typology, signal how architecture facilitated the coalescence of livelihood, culture, and ecological responsibility.

While the British cotton industry built itself over the course of roughly a century, guided by principles of colonial extraction and labour exploitation, the textile traditions of South Asia stretched back to ancient times and built itself upon a continuous transfer and expansion of knowledge and generational expertise fomented in familial relations. Textile labour and expertise was nurtured within a matrilineal family structure and expanded upon through communal practices of identity making in technique, pattern, colour and form. In contrast, colonial interventions sought to isolate production from the domestic sphere by introducing industrial factory systems, disrupting this integrated architectural logic. By removing cotton processing from its local, gendered, and ecological context, these factories imposed an alien typology that undermined traditional modes of living and labor, severing the intimate relationship between households and their natural environment.



7. Bernard S. Cohn, "Cloths, Clothes, and Colonialism: India in the Nineteenth Century," European Intrud ers and Changes in Behaviour and Customs in Africa, America and Asia before 1800, September 8, 2017, 189–239, https://doi.org/10.4324/9781315255934-11.
8. Vandana Shiva and Maria Mies, Ecofeminism (London: Zed Books, 1993), 98–101.

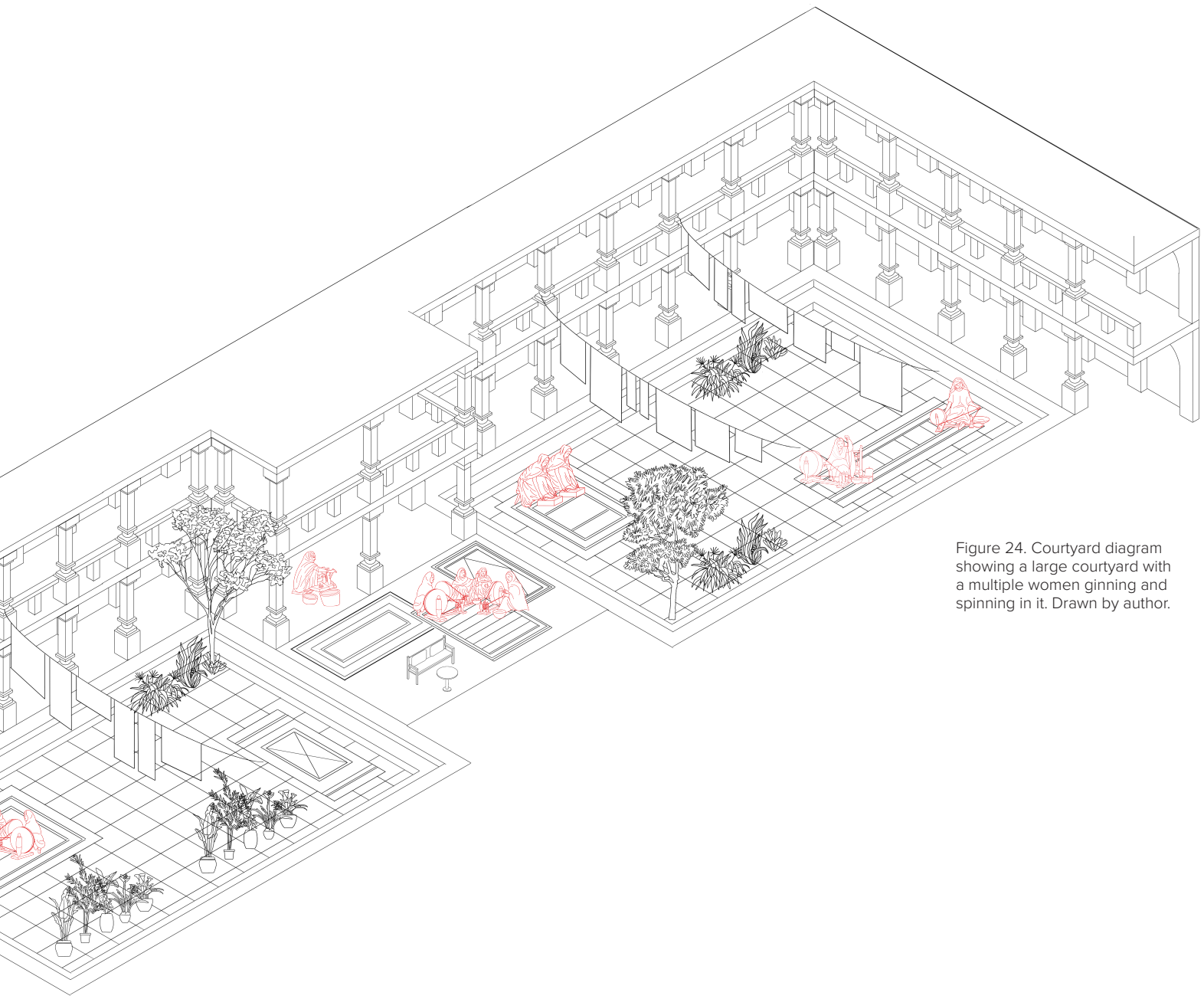


Figure 24. Courtyard diagram showing a large courtyard with a multiple women ginning and spinning in it. Drawn by author.

DESTRUCTIVE IMPACT OF MECHANICAL GIN & SPINNING WHEEL

In the eighteenth century, British civil and economic interests pushed technological advancement and colonial land occupation in a successful effort to supplant South Asia as the global leader in cotton textile production. Firstly, British policy such as import tariffs on Indian cotton, and a ban on finished textile goods from South Asia worked to discourage the consumption of South Asian textiles in favour of the nascent British market. To further suppress the Indian textile market, the British state funded the rapid militarization of its South Asian colonies.[9] Two inventions defined this successful push towards economic growth and marked the beginning of the British Industrial Revolution – by rendering hand ginning and spinning obsolete.[10]

During the seventeenth century, South Asian textile trade had reached its epoch, and European communities were enchanted with "the soft, lightweight, durable, and gorgeously dyed Indian cotton textiles."[11] English wool and linen textile producers could not compete and after a widespread outcry, lawmakers enacted the Calico Act of 1721 which sought to limit the trade and use of Indian textiles. In turn, British wools and linens failed to sell when imported to South Asia, furthering the divide between each region's textile economy. This threatened the British identity which was growing to understand itself as "a global master…possessing rationality, science, markets, and global capital."[12]

An obsession with South Asian cotton textiles and how to conquer the labour of cotton spread across Britain, evidenced in *A Treatise on the Cotton Trade* published in 1789.[13] The author asserts British superiority in production by employing racist tropes to erase the skilled labour of Indian textile workers, primarily South Asian women. He goes on to assert that the species of desi cotton, Gossypium arboreum, grows so abundantly in the subcontinent that it "requires no culture" and is God's wonderful gift to a land of "savages", framing the South Asian cotton industry as one that operates without any knowledge or labour of cultivation. The treatise presents a contrasting image of "the native" lounging under a tree versus the European armed with property and engaging with machinery, implying that the native's actions can hardly be considered labour at all. The author goes on to infantilize native labour by asserting, "The Indian must employ 365 days to do that which a simple child, by means of mechanical invention, can do in one."[14]

9. Shashi Tharoor, Inglorious Empire: What the British Did to India (s.l.: Penguin Books Ltd, 2018), 59–87.
10. Angela Lakwete, Inventing the Cotton Gin: Machine and Myth in Antebellum America (Baltimore: Johns Hopkins University Press, 2003), 8–12.
11. Emily M. West, "Labor and the Literary Technologies of Mechanization in the British Cotton Industry," Journal for Early Modern Cultural Studies 17, no. 4 (2017): 49–74, https://doi.org/10.1353/jem.2017.0026.
12. Emily M. West, "Labor and the Literary Technologies of Mechanization in the British Cotton Industry," Journal for Early Modern Cultural Studies, 50.
13. Anonymous, A Treatise on the Cotton Trade: In Twelve Letters. To the Levant Company, West-India Planters, and Merchants. by Experience (London: Printed for the author by John Abraham, printer, 1789).
14. Anonymous, A Treatise on the Cotton Trade: In Twelve Letters, 60.

On the domestic front, British government bonds were pushing investment into the mechanization of time-consuming cotton processes such as ginning and spinning, in order to outcompete the manual hand processing used in South Asia. Firstly, the water powered spinning frame patented by Richard Arkwright in 1769 allowed three hundred times the production of consistent, high-quality yarn than hand spinning did.[15] The frame and hydro-power model of the device was instrumental in the factory design of mills seen exponentially being built across Britain in the eighteenth and nineteenth century. With one large water powered motor in a central location on the factory floor, multiple spinning frames, rectangular and small, could be operating in the same room simultaneously. This was followed by Eli Whitney's patent of the mechanical gin in 1793, a piece of machinery decades in the making.[16] The purpose of the gin was to separate the fibres from the cotton seed without compromising their structural length. Originally done by the hand, the push to mechanize ginning was in hopes of taking advantage of short staple cotton, the material produced from the plantation model of annual harvesting. Unlike perennial cotton, the fibres in annual cotton remain relatively separate from the seed making them easier to gin and more advantageous to mechanical ginning processes. Similar to the spinning frame, the mechanical gin was easily adapted to multiple power sources, such as hand, animal, water or steam power. This made the technology scalable and encouraged the factory mill model's development.

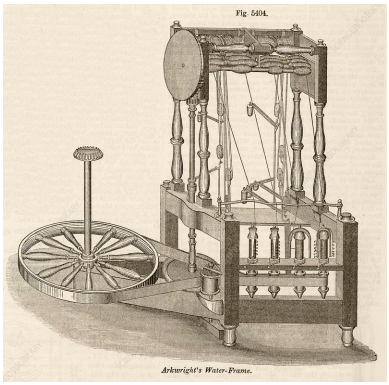


Figure 25. Patent etching of the spinning frame invented by Richard Arkwright and John McKay, 1769.

Widespread use of the mechanical gin and spinning frame ushered England into the Industrial Revolution, transforming European attitudes on labour, time and production through profoundly spatial implications introduced in the typology of the factory.[17] The factory became a new organizing framework for economic and social life, representing a departure from the decentralized, craft-based modes of production previously embedded within domestic spaces. Architecturally, the design prioritized linear workflows, with large open interiors that allowed for the placement of machinery in systematic, assembly line arrangements. It also manifested hierarchical spatial divisions that mirrored the emerging industrial class system. Workers were confined to functional, rigidly monitored areas, while owners and managers occupied elevated or separate spaces, underscoring their authority. This environment disciplined the working body and dictated behaviours to align with the mechanized ethos of industrial production. On a conceptual level, the typology transformed the English working class's relationship with time, by spatially separating daily practices into compartmentalized places.[18] The shift from seasonal and task-oriented work to temporally-regulated schedules marked a profound reconfiguration of human engagement with time and space.[19]

15. Angela Lakwete, Inventing the Cotton Gin: Machine and Myth in Antebellum America. Baltimore: Johns Hopkins University Press, 2003, 11.
16. Angela Lakwete, Inventing the Cotton Gin: Machine and Myth in Antebellum America, 33–35.
17. Emily M. West, "Labor and the Literary Technologies of Mechanization in the British Cotton Industry," Journal for Early Modern Cultural Studies 17, no. 4 (2017): 49–74.
18. Michael J. Sauter, The Spatial and Temporal Worlds of Industrial Capitalism (Cambridge: Cambridge University Press, 2009), 118–120.
19. Michael J. Sauter, The Spatial and Temporal Worlds of Industrial Capitalism, 122.

By undermining the methods, organization, and labourers producing cotton textiles in South Asia, Britain constructed ideological justification for the displacement of native textile processes. After Punjab came under British administration, between 1880 and 1900, over a hundred and fifty cotton ginning factories were established across the province.[20] These factories were built everywhere, from small farming towns to the outskirts of large cities. Typically constructed of brick and light steel framing, they were made in a Victorian English style, almost always with a clock tower at its symmetrical centre. This typology was similar, in its form and urban effect, to railway stations, which were also steadily appearing across the subcontinent. The structures were immense, with the built footprints of cotton mills spanning as large as a kilometre squared. They imposed themselves on the urban fabric of Punjabi towns and cities, which were composed of narrow streets, small houses, tight bazaars, and compact courtyard homes. The integration of a clock tower was in efforts to impose regular shifts on working natives by embedding a euro-centric industrial understanding of time in the collective conscience. The materials used to construct the mills were sourced both locally and imported. Steel for the light framing was typically imported from Britain or occasionally sourced from Calcutta. The clay for bricks came from the Thar Dessert of Rajasthan and Sindh. The factories themselves were stocked with machinery made in Lancashire. In order to smelt the steel, fire the bricks, and power the motors for machines, extensive coal mining was installed in the province of Baluchistan. Since mining was a difficult job with many casualties, native Balochis did not want to work for foreign Crown mines. Nonetheless, thousands of Balochis were abducted and forced to work as mining labourers, constructing and powering these cotton mills.[21]

The typology of the factory displaced hundreds of thousands of women from skilled, community-based labour, stripping them of socio-economic agency and disrupting the transmission of indigenous knowledge. It centralized production into a mechanized model that commodified work, forcing native populations into exploitative hard labour to generate capital for an elite minority. This shift entrenched systemic inequalities, eroding local autonomy and reinforcing colonial and patriarchal power structures.

20. Gupta, Suchitra. “The British Impact on the Indigenous Cotton Textile Industry of the Punjab, 1875 - 1885.” Proceedings of the Indian History Congress 34 (1973): 122–28. http://www.jstor.org/.
21. Sahoo, Rajib Lochan. “Indian Cotton Mills and the British Economy, 1854-1894.” Proceedings of the Indian History Congress 76 (2015): 356–67. http://www.jstor.org/stable/44156602.



Figure 26. Women working in a cotton mill in Manchester, England, 1887. Wikimedia Commons.

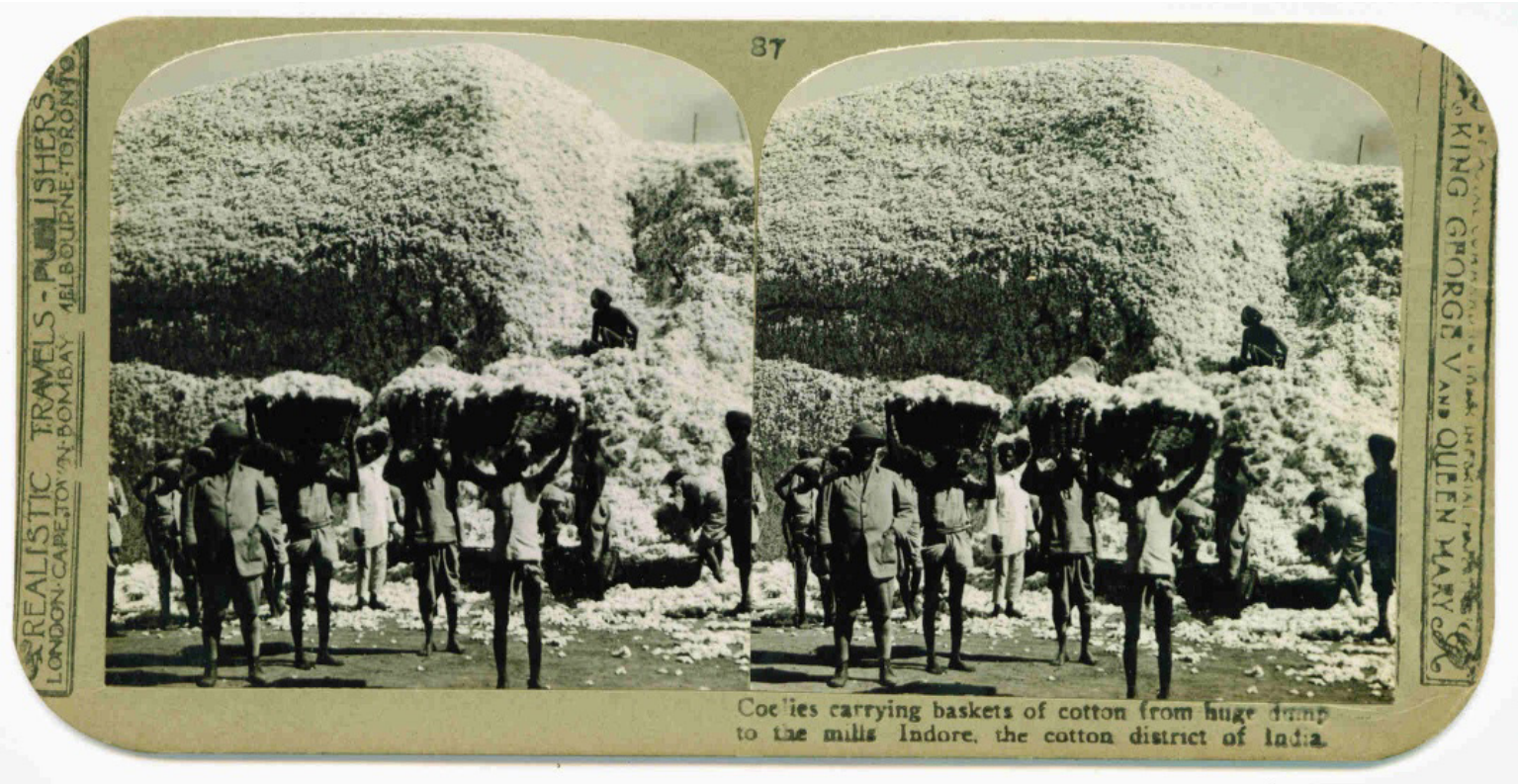


Figure 27. Cotton Merchants in Bombay. Francis Firth. Photograph. Wikimedia Commons.Accessed November 28, 2024. https://en.wikipedia.org/.

When the Sutlej Cotton Mills was constructed in the small central Punjabi village of Okara it was the largest cotton mill in Asia, with a built footprint of more than 250,000m^2, it dwarfed every other built structure in town.[22] The mill drastically altered the urban fate of Okara through exploitative labour practices, rapidly tripling its population with migrant factory workers and facilitating the urban development of slums.

By the 1930s, there were over four hundred operating gins in Punjab, many in small villages and towns which experienced rapid influx of migrant workers, displaced from other regions, coming to operate the factory.[23] The Sutlej Cotton Mills was established in Okara in 1934, by the Birla Textile Group which was owned by a wealthy Hindu family and financed by British Crown companies.[24] The primary function of the mills was to mechanically gin cotton bolls and spin its fibres into yarn. Half this yarn would be exported to Manchester for weaving while a small portion of it would be woven in the mill, sold to market textile sellers, or sold to local weavers. Raw cotton, bolls, and spindles of yarn would be stored in the mill by the tonnes.

A year after its opening, all of Sutlej Cotton Mills' factory workers, except the office and administration staff, went on strike for two weeks to protest for higher wages and shorter shifts. At the time, the factory workers, less than half of whom were women, were working sixteen-hour shifts for one rupee a day, equivalent to 120 Indian rupees today, or one Canadian dollar and twenty cents. Women factory workers complained about the dangers of arriving and leaving the mill for shifts due to the limited traffic around the large building and lack of lighting. Many women reported being harassed, several had been raped, and two had been killed on their way to or from the mill. The strike ended after the Birla Group agreed to raise wages for male factory workers and reduce shifts to 12 hours a day. No actions were taken to meet the demands of equal wages or workplace safety for women.[25]

Recent historical investigations into the lifestyle and general health of cotton mill workers in Punjab, and British India at large, provide valuable insight into how challenging and sickly their environments were. Almost all mills were large enclosed-warehouse structures which kept dust and debris in. Punjabi mill workers worked twelve-hour shifts at a minimum, spending the majority of their day amongst heavy machinery, burning coal, and cotton dust. Most mill workers lived close to the mills they worked at, in dense, compact housing with scarcely a bathroom or source of heat, let alone windows. This housing was not maintained by the city, colonial authorities or mill operators, and lacked in adequate hygiene facilities and drainage.



COTTON CONDITIONS IN INDIA.

LONG HOURS AND INEFFICIENT LABOUR.

LANCASHIRE'S OPTIMISM DESPITE JAPAN'S TRADE ADVANTAGES

"Japan has an undue advantage, due to the fact that her cotton mills run 22 hours per day. Under this arrangement less capital is necessary, and overhead charges are considerably reduced. If and when the Washington Convention Agreement to work 55 hours per week is ratified, Lancashire will be in a position to compete with Japan on more equal terms.

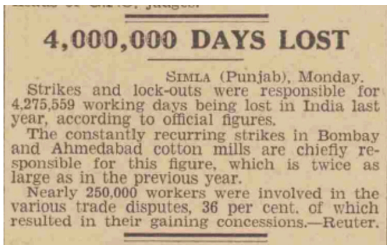
"We have no fear for the future of the Lancashire textile industry, our final conclusion being that, taking every circumstance into consideration, Lancashire can compete successfully with her competitors and will retain her position as the premier cloth-producer in the world."

In these words Messrs. J. Hindle, J.P., the Burnley Weavers' secretary, and M. Brothers, of Blackburn, conclude their report of an investigation made by them on behalf of the United Textile Factory Workers' Association. They were accompanied by Mr. Tom Shaw, M.P., but be per day, the operative does not work continually the whole of the day, time being allowed for prayers, bathing, smoking, etc. It is questionable if more than eight hours' productive labour is obtained from the individual operative. In order that the spindles and looms may be kept running, the management must employ extra labour. One of the first things to arrest our attention was the large number of people squatting in the mill yard and standing about inside the mill, apparently having no particular machine under their supervision.

Costs of Production.

It is a very difficult problem to ascertain the actual cost of production. Indian mill officials state that what to us may appear a poor individual wage in comparison with the individual wage paid in Lancashire, yet, if judged by the standard of efficiency and the increased number of operatives employed, the cost of labour to them becomes dear. Cotton manufacturers in India are also bleachers and dyers, and in this respect they are in a much more favoured position than their competitors. Other factors in their favour are the close proximity of the cotton fields and ginning plants, and the home market for their

Figure 28. The Lahore Gazette. 1927. British Newspaper Archives.



4,000,000 DAYS LOST

SIMLA (Punjab), Monday.

Strikes and lock-outs were responsible for 4,275,559 working days being lost in India last year, according to official figures.

The constantly recurring strikes in Bombay and Ahmedabad cotton mills are chiefly responsible for this figure, which is twice as large as in the previous year.

Nearly 250,000 workers were involved in the various trade disputes, 36 per cent. of which resulted in their gaining concessions.—Reuter.

Figure 29. Times of India. 1916. British Newspaper Archives.

22. Iqbal Uzma, Sandra Heaney-Mustafa, and Mukaddas Afzal, "Women Empowerment and Poverty Reduction in Rural Okara, Punjab Pakistan," The Third International Tropical Agriculture Conference (TROPAG 2019), March 15, 2020, 125.
23. Prakash Tandon, Punjabi Century: 1857-1947 (Berkeley u.a., California: Univ. of Calif. Pr., 1973), 157.
24. Prakash Tandon, Punjabi Century: 1857-1947, 156–157.
25. Chandavarkar, Rajnarayan. "Industrialization in India before 1947: Conventional Approaches and Alternative Perspectives." Modern Asian Studies 19, no. 3 (1985): 623–68. http://www.jstor.org/.

These neighbourhoods began to be known as *slums*[A], a word loaded with negative connotation which deterred outsiders from visiting, and dwellers from finding alternative housing by establishing a rigid socio-economic divide rooted in place. The condition of these homes, in their compact, dense nature, did little to relieve respiratory symptoms workers developed in the mills. Visiting a physician was next to impossible as no clinics operated in the slums, long shifts deterred workers from travelling to other parts of the town or city for medical help, and the modest salary of a mill worker could not afford the visitation fee.[26]

Three years later, in 1938, Sutlej Cotton Mills went on strike again to protest unsafe working conditions. Many of the workers in the mill had developed breathing problems – tuberculosis, bronchitis and byssinosis, a respiratory illness which was specific to cotton workers, particularly those involved in early stages of cotton processing. Common symptoms reported amongst mill workers was chest tightness, trouble breathing, consistent coughing or wheezing, and regular build up of phlegm. It did not matter whether you were working directly with the machinery, or were in the vicinity as a helper, cleaner, sweeper or sorter – the reported cases of respiratory illness were spread evenly amongst all occupations. Some mills employed a company physician who would routinely check on workers' health if the owners feared their labour force growing weak or dying, to the point of inefficiency and extra expense. However, these company physicians were notorious for prescribing high dosages of heroin and other opioids as a general remedy to all medical conditions. Many historians believed this developed, or at least worsened, drug and alcohol abuse amongst slum-dwelling migrant workers. Census reports show most of these workers were single males, with few being women and/or children, with a major chunk of people living in slums being of Dalit and Muslims descent.[27]

The vast majority of mill workers had migrated from rural communities to industrial towns and cities in order to sustain themselves – as non-agrarian rural communities had been largely displaced, and many subsistence farmers had lost their livelihood to industrialization. Drawing upon Gayatri Spivak's concept of the subaltern offers a critical lens to understand the spatial and architectural implications of the factory typology. Spivak's definition of the subaltern refers to individuals or groups who exist in the margins of colonial societies and are silenced by dominant structures of power.[28] The emergence of the factory as the dominant industrial typology necessitated the creation of a subaltern class, composed of disenfranchised people whose labour could be exploited for minimal compensation to fuel capital accumulation. The spatial organization of the factory subordinated workers to machines, emphasizing efficiency and discipline over individuality or autonomy. Reduced to 'bodies in motion', workers became part of the

A. UN-Habitat defines a slum household in operational terms, as lacking one or more of the following indicators: a durable housing structure; access to clean water; access to improved sanitation; sufficient living space; and secure tenure. The first four rely on conventional definitions; the last is the most difficult to assess and is not currently used in slum measurement (UN-Habitat, 2003).



INDUSTRIAL CONDITIONS IN THE PUNJAB

General Depression in Textile Trade

DROP IN EXPORTS OF SPORTS GOODS

The following is a summary of the industrial and commercial conditions of the Punjab for the month of May, 1931:

Market conditions generally were dull and the money market was tight. Owing to the financial stringency no fresh departmental programmes for industrial development were undertaken. Private enterprise is still shy.

TEXTILES

There was a general depression. The Government Demonstration Weaving Factory at Shahdara continued to produce cotton and silk cloth. The Fancy Weaving Factory, Gujranwala, was able to secure advance orders and had no difficulty in disposing of its products. Negotiations are proceeding for the installation of another weaving and spinning factory at Lahore.

The mills at Amritsar continued to work. The handloom weavers at Hoshiarpur and Amritsar continued to produce their usual varieties such as lungees, etc., but the demand for their products has gone down considerably. Ludhiana is another important centre for textiles. The handloom worker there was unable to compete with the mill made cloth in coarse counts. There was not much demand for artificial silk goods.

Silk goods did slightly better. The manufacturers who had organised marketing arrangements in and outside the province had no difficulty in disposing of their goods. There was an increased demand for printed and coloured *sarees* and *chaddars* which were largely exported to Bengal. On account of the general depression the crushing industry has ceased to be a paying proposition.

SPORTS

Sialkot is the main centre of the sports industry in the Punjab. There was a great drop in the export trade due mainly to the all round depression and also to a certain extent to the high tariff wall raised by Australia, one of the good customers of sports goods from Sialkot, against Indian sporting goods.

The export business has fallen by about 50 per cent. The tennis and Badminton gut industries which had almost become the monopoly of Sialkot are also finding formidable rivals in the silk gut and the Japanese and Australian guts. Owing to the decreased demand many workers have been thrown out of work.

SOAP

In Lahore the output of soap increased. In Amritsar too the existing factories are doing very well and it is considered that there is scope for further enterprise in this direction provided high class soap is produced. Soap factories in Sialkot circle also did profitable business. Gangosen Soap Factory, Ludhiana, commenced working during the month. It has an electrically driven plant with a capacity for producing 27 maunds of soap in 10 hours.

METAL INDUSTRY

The iron foundries at Lahore, Amritsar, Gujranwala, and Lyallpur continued to make spare parts of various kinds of machinery. The iron bars, squares and rounds produced by the Mukand Iron and Steel Rolling

Figure 30. The Englishman. 1934. British Newspaper Archives.

26. Qadeer, Imrana, and Dunu Roy. "Work, Wealth and Health: Sociology of Workers" Health in India." Social Scientist 17, no. 5/6 (1989): 45-92. https://doi.org/10.2307/3517444.
27. Sahoo, Rajib Lochan. "Indian Cotton Mills and the British Economy, 1854-1894.", 12–15.
28. Gayatri Chakravorty Spivak, "Can the Subaltern Speak?" in Colonial Discourse and Post-Colonial Theory: A Reader, ed. Patrick Williams & Laura Chrisman (New York: Columbia University Press, 1994), 66–68.

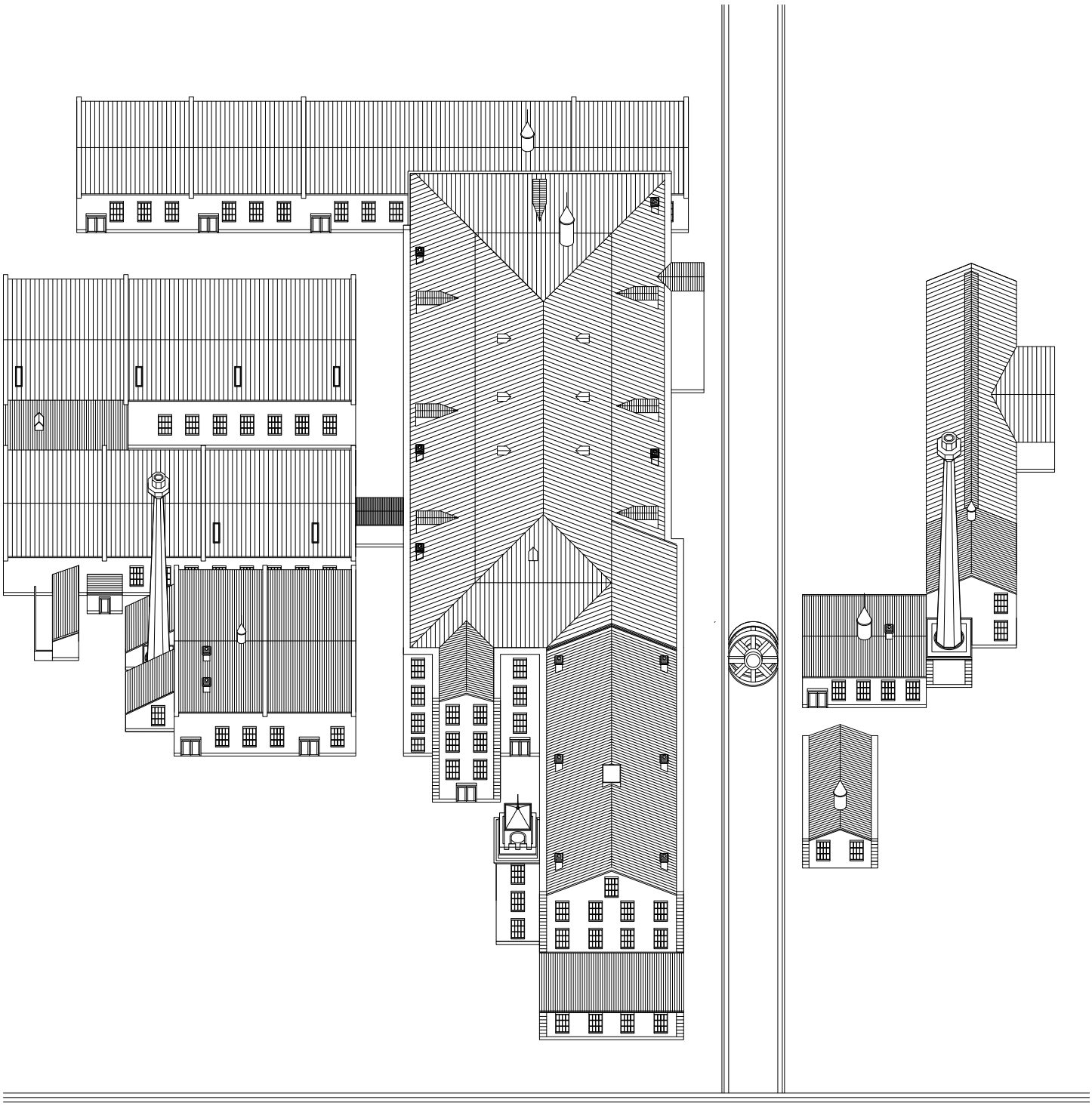
machinery, their agency and wellbeing striped away through architectural mechanisms such as rigidly structured assembly lines, monitored workspaces, and spatial barriers that segregated workers from decision making processes. At the urban scale, factories disrupted indigenous modes of production and appropriated land, displacing local communities – often absorbing them into the labour force as a subaltern class. Furthermore, the typology enforced the standardization of time and space, erasing localized and culturally specific labour practices in favour of a homogenized, profit driven model.

The factory thus becomes an architectural and spatial instrument of subalternization, systematically producing and perpetuating a class of disenfranchised labourers whose work is dehumanized and whose voices are excluded from the structures of power that govern them. By creating environments designed to extract maximum labor while minimizing worker autonomy, the factory serves as both a physical and symbolic manifestation of the mechanisms through which capital exploits the subaltern for profit.

The dire conditions that mill workers lived and worked under led to the emergence of organized labour resistance. Most workers were unhappy with their circumstances and believed their employers could do more to ensure their safety and wellbeing. After repeatedly filling claims with floor managers and the administrative office, the Crown authorities were forced to conduct an investigation. However, when the investigation was conducted, British officials only considered European individuals to be credible witnesses and thus refused to account for Punjabi workers' criticisms in their reports. This resulted in an official report declaring the Sutlej Cotton Mills a safe and healthy workplace with the only threat to the mill labeled as "brutish savage Indians" who were accused of being "violent, lazy schemers."[29]

Workers had no option but to go on strike to have their complaints taken seriously and demands met. When cotton mill labourers across British India went on strike to protest oppressive working conditions, vitriolic writing was published in British and Indian newspapers. The British Textile Journal released an article thanking mill workers in Lancashire and Manchester for their "efforts in limiting the hours and hardship of labour in Indian mills" while apologizing for the entitled behaviour of striking natives in "subjecting British mill workers to the same illnesses they protest" by increasing the burden of cotton processing on English mills to ensure market supply chains would not be majorly disrupted.[30] This perspective valued British lives over South Asian ones, and saw British labour as virtuous while asserting the privilege South Asians had as mill workers. It reduced natives to subhuman and turned their bodies into tools of capitalism by stripping them of their agency and right to life.

29. Chandavarkar, Rajnarayan. "Industrialization in India before 1947: Conventional Approaches and Alternative Perspectives." Modern Asian Studies 19, no. 3 (1985): 623–68.
30. The British Textile Journal, (London, UK, 1937), 1.



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Figure 31. Axonometric drawing of the Sutlej Cotton Mills. Drawn by author.



Figure 32. Portrait of an East India Company Official. Indian painting, 18th century.

Wikimedia Commons. Accessed November 28, 2024. https://en.wikipedia.org/.

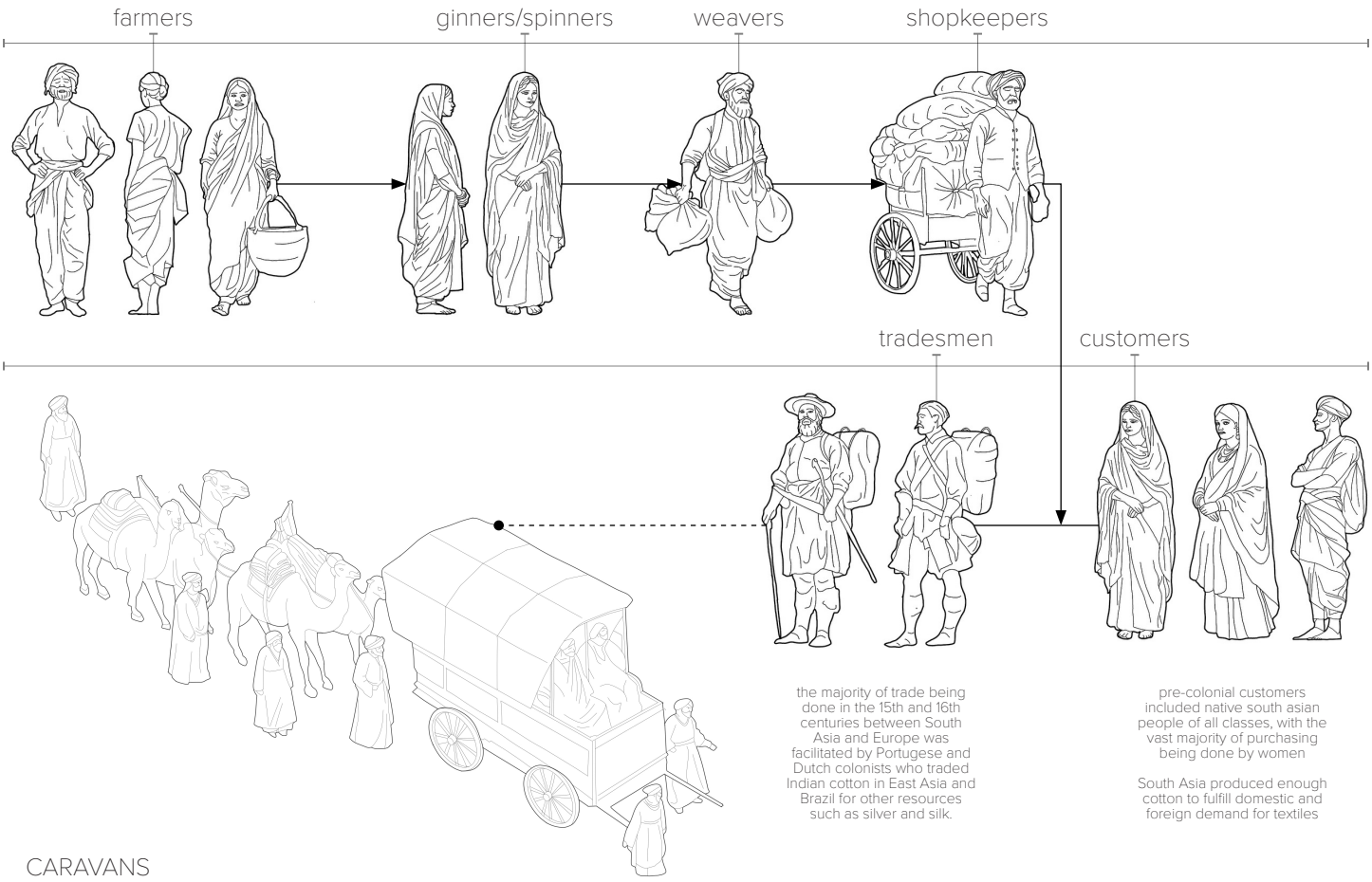
WORKERS ORGANIZE

The strike ended weeks later at the Sutlej Cotton Mills in Okara, when the Birla Group agreed to install operable windows in their facility in order to stimulate a healthy working environment. Once installed, these windows remained completely closed for four months of the year, while being opened for three to four hours a day the rest of the year. The number of respiratory illnesses and related deaths remained steady and mill workers continued to regularly strike in resistance to oppressive working conditions for a decade to come, growing in fervour as the province of Punjab approached Partition.[31]

As members of the subaltern, the native working class asserted their agency through acts of resistance such as withholding labor and occupying space without contributing to capital production. These actions of mill workers disrupted the colonial economy's reliance on continuous labor extraction and challenged the mechanisms of control embedded within industrial and colonial systems. The emergence of labor ideology introduced new frameworks for understanding collective rights and the value of work, catalyzing the formation of solidarity networks across the colony. These networks transcended local boundaries, uniting workers through shared struggles against exploitation and fostering organized resistance. This shift not only redefined the relationship between labor and power but also highlighted the capacity of the subaltern to mobilize against systemic oppression, carving out a space for collective agency within the colonial landscape.

This summer, I attempted to learn the art of spinning at the Kitchener Spinners and Weavers Guild. In a well-lit, air-conditioned room —a sharp contrast to the stifling mills of Okara—I fed raw bulbous fibers through the spindle repeatedly until I felt the tension grow between my fingers. At first, the thread I produced was loose and inconsistent, completely unsuited for mechanical processes, much like the crude, unstandardized threads spun before industrialization. Yet, the imperfections of my work reflected a deliberate return to slowness and craft, echoing the resistance of mill workers who sought to reclaim autonomy over their labor. Only hands knitting or crocheting with careful delicacy could make something of this which is what most guild members did. By producing unique, hand-spun yarn to knit and crochet garments, they intentionally disengage from exploitative structures of mass production. Like the mill workers, the guild members through their craft are engaging in a form of quiet resistance.

31. Sahoo, Rajib Lochan. "Indian Cotton Mills and the British Economy, 1854-1894." Proceedings of the Indian History Congress 76 (2015): 356–67. http://www.jstor.org/stable/44156602.



the majority of trade being done in the 15th and 16th centuries between South Asia and Europe was facilitated by Portugese and Dutch colonists who traded Indian cotton in East Asia and Brazil for other resources such as silver and silk.

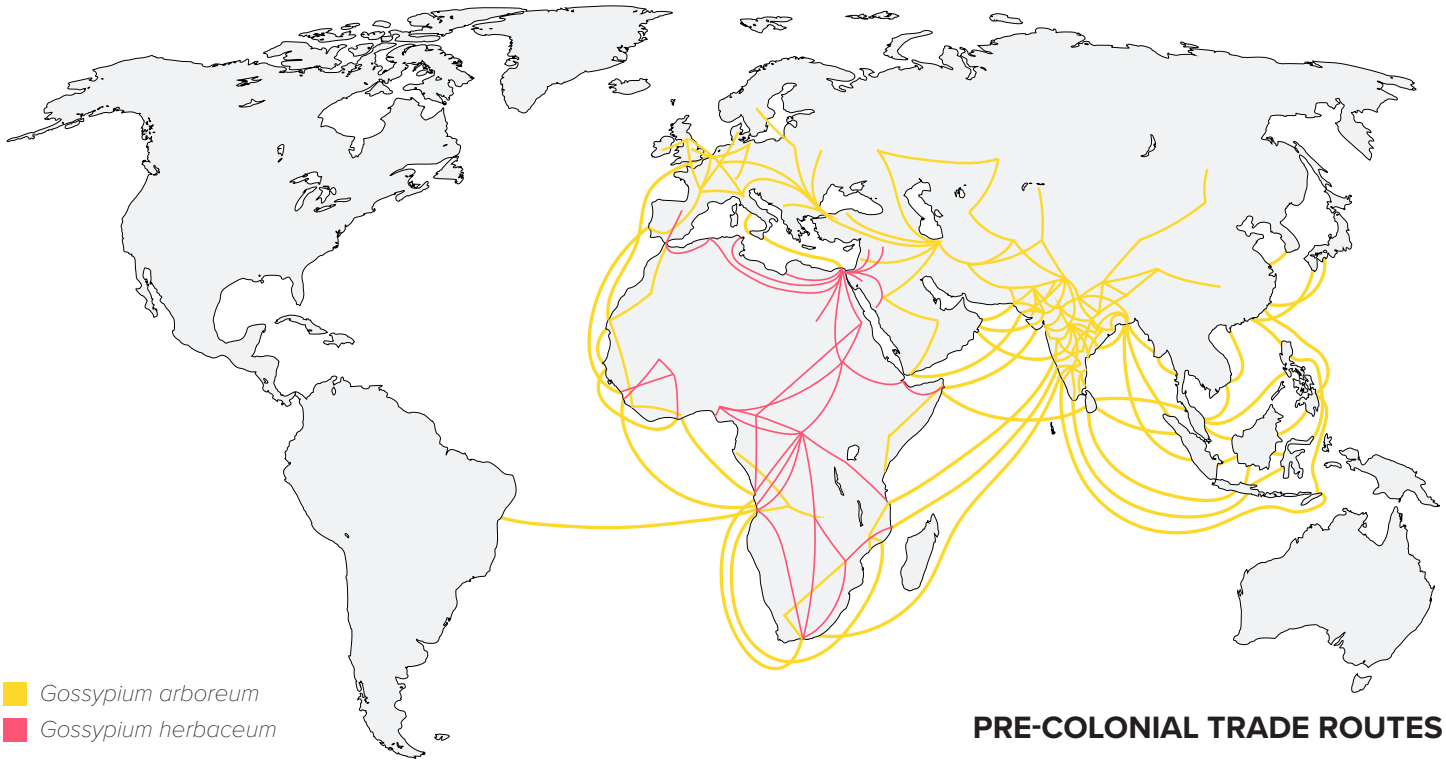
pre-colonial customers included native south asian people of all classes, with the vast majority of purchasing being done by women

South Asia produced enough cotton to fulfill domestic and foreign demand for textiles

CARAVANS

Scale 1:120

Before the Age of Discovery, terrestrial transport was the most prominent form of trade, and **caravans** were the primary system of travel from city to city.



Gossypium arboreum

Gossypium herbaceum

PRE-COLONIAL TRADE ROUTES

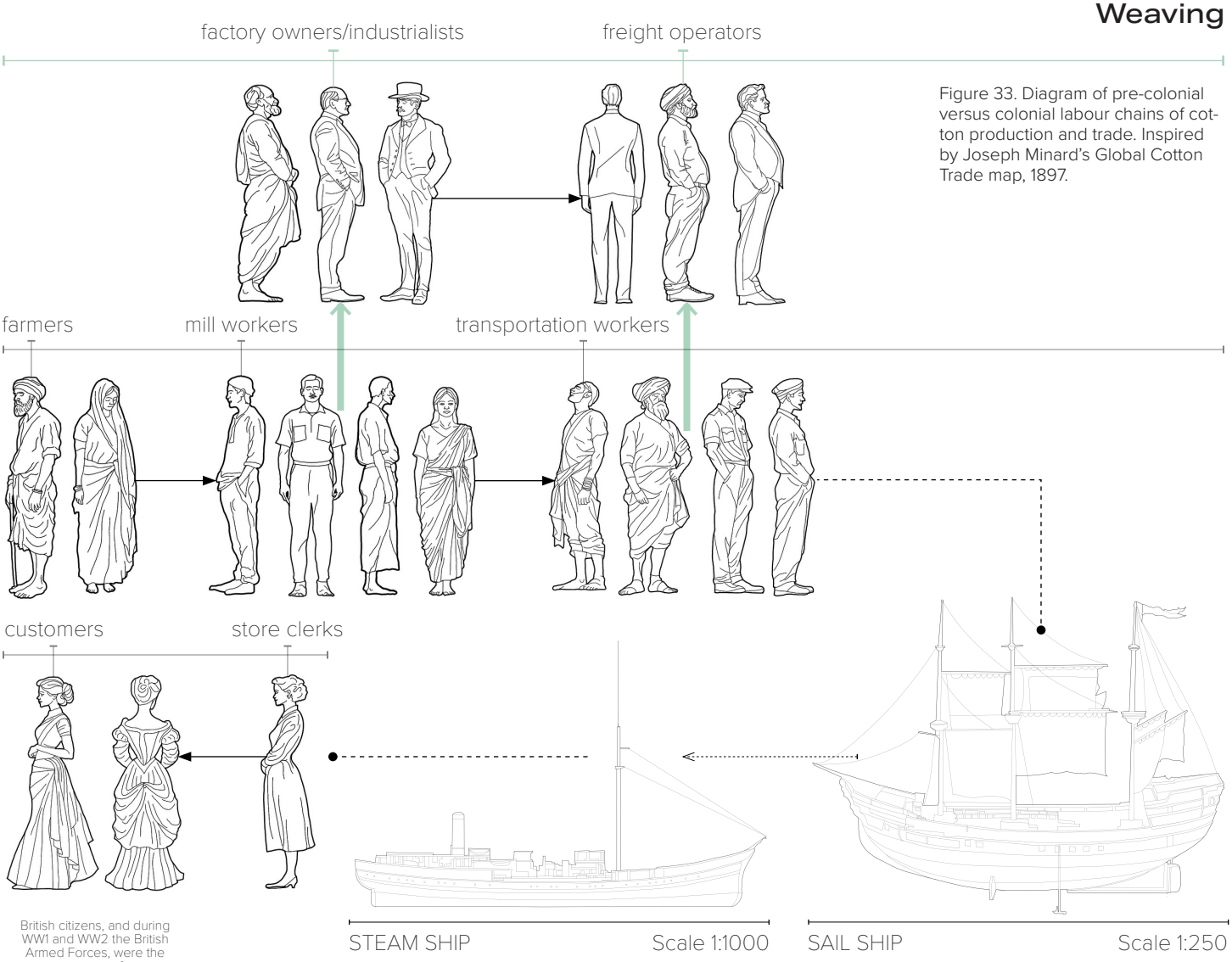
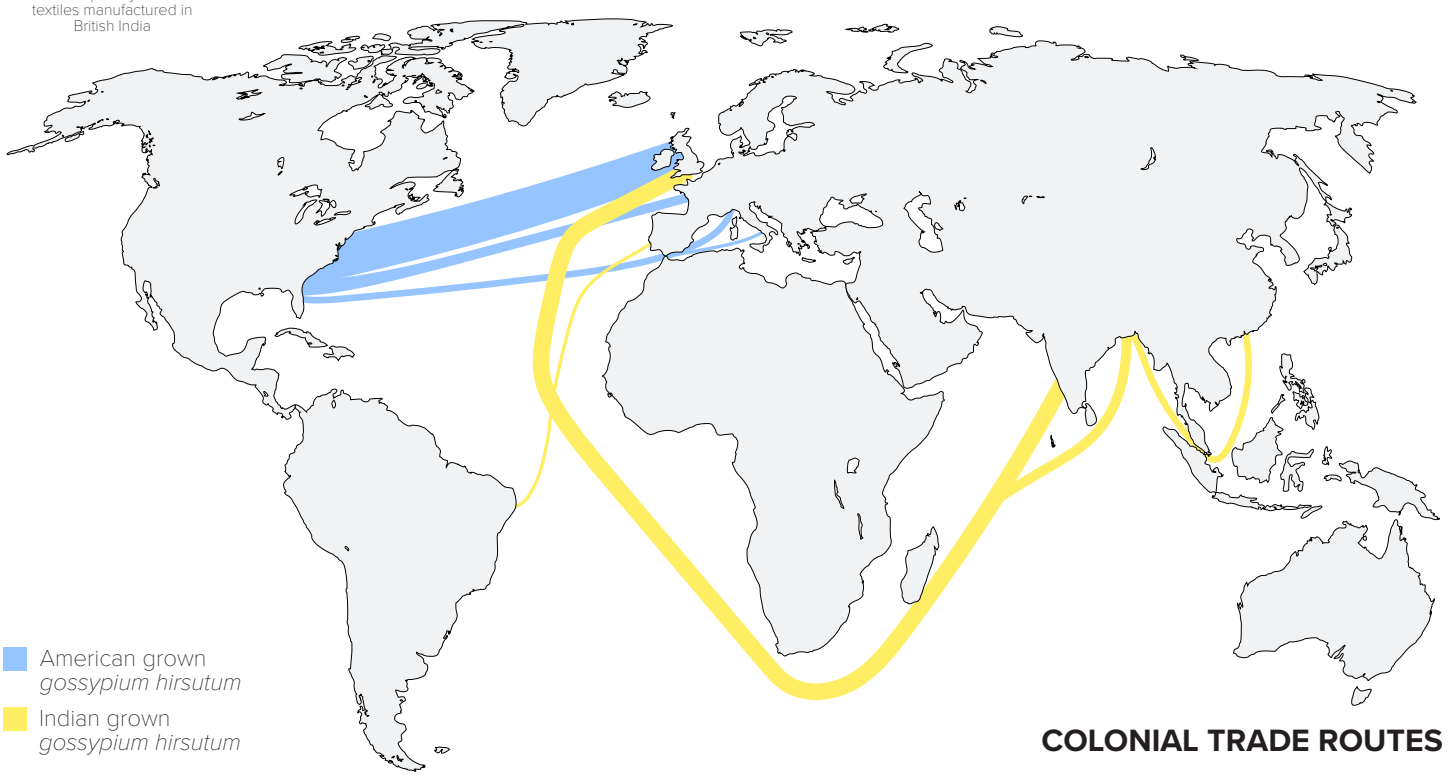


Figure 33. Diagram of pre-colonial versus colonial labour chains of cotton production and trade. Inspired by Joseph Minard's Global Cotton Trade map, 1897.

British citizens, and during WW1 and WW2 the British Armed Forces, were the consumer priority for cotton textiles manufactured in British India



COLONIAL TRADE ROUTES

Weaving – Native Resistance to Wartime Colonial Policy *(1940s)*

DELHI CLOTH MILLS

On July 9th of 1946, Delhi Cloth Mills, the largest cotton textile mill in the capital city, closed for business. The majority of weavers and spinners the mill employed were registered members of the Textile Workers' Trade Union. Aruna Asaf Ali, the union's president had sent a letter to Lala Shri Ram, the mill's owner, in March earlier that year, outlining the union's demands and giving notice of a strike if demands were not addressed. Four months later, police patrolled the mills empty grounds where they had arranged barricades to mitigate property damage. Over the next four days, more than nineteen thousand mill workers went on strike across Delhi, resulting in the closure of the city's three largest cotton mills, two of them owned by Lala Shri Ram.[1]

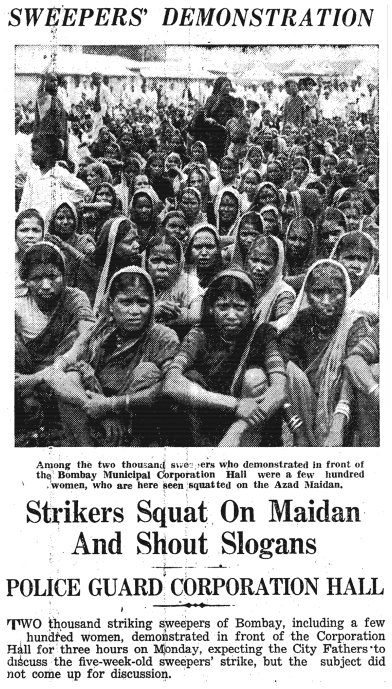
To meet the rising demands of cotton textiles caused by the war effort in Europe, British lawmakers began propagating a mechanical weaving industry in South Asia, resulting in the alienation and decline of native hand weaving. Wartime policy saw the further exploitation of the native working class by banning farmers from growing food and coercing millions of people to fuel and operate cotton mills. The obsolescence of hand weaving severely degraded any surviving native textile economy, erasing modes of knowledge which were instrumental in developing cotton as a textile material, and pushing the native working class increasingly towards producing capital for the empire.

The control exercised by British administration on native life is most starkly observed at the scale of the body. Focusing on the final era of British occupation in Punjabi during the 1940s, we can observe the extent to which colonial policy ruptured indigenous modes of being for the sake of fueling global imperialist operations. Already reeling from the impact of production demands during World War I, native communities experienced the most intense destruction of life executed by British colonists during World War II in effort to extract labour and resources. To survive annihilation in the face of colonial ruin, the working class began systemically organizing across the colony, striking and boycotting to effectively disrupt the capitalist cycle of exploitation. The defining boycott effort of the 1940s was the Khadi Movement, a collective agreement amongst native communities to stop buying British manufactured cloth and start supporting local hand weavers to re-establish independent native economies.[2]

To understand the sociopolitical environment of Punjab at the time, we will begin by analyzing Britain's wartime colonial cotton economy and its effects on native bodies. Then we will unpack the Khadi Movement as a collective subscription to anti-colonial ideas of native sovereignty through reconnection with the hand weaving industry. Lastly, this will lead us to understanding the dynamic transformation of space which occurred with British exodus, constructing the displacement of millions.



Figure 34. Trade union members strike in honour of Muharram in Delhi. 1946. Ravi Ahuja. Cambridge University.



SWEEPERS' DEMONSTRATION

Among the two thousand sweepers who demonstrated in front of the Bombay Municipal Corporation Hall were a few hundred women, who are here seen squatted on the Azad Maidan.

Strikers Squat On Maidan And Shout Slogans

POLICE GUARD CORPORATION HALL

TWO thousand striking sweepers of Bombay, including a few hundred women, demonstrated in front of the Corporation Hall for three hours on Monday, expecting the City Fathers to discuss the five-week-old sweepers' strike, but the subject did not come up for discussion.

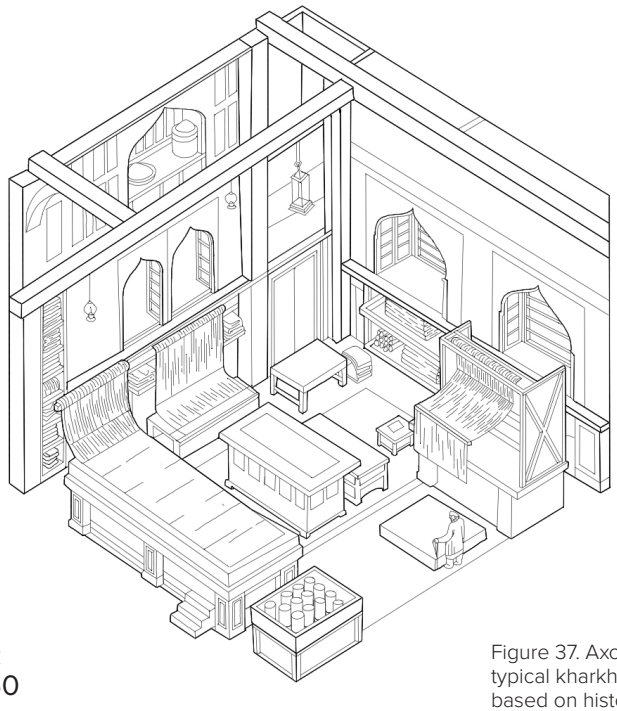
Figure 35. Sweepers Demonstration, The Times of India, June 21, 1949.

1. Arun Joshi, Lala Shri Ram: A Study in Entrepreneurship and Industrial Management (New Delhi: Orient Longman, 1975), 45, accessed August 10, 2023, https://archive.org/, 558–563.
2. Peter Gonsalves, Clothing for Liberation: A Communication Analysis of Gandhi's Swadeshi Revolution (Los Angeles: SAGE, 2010), 92–93.



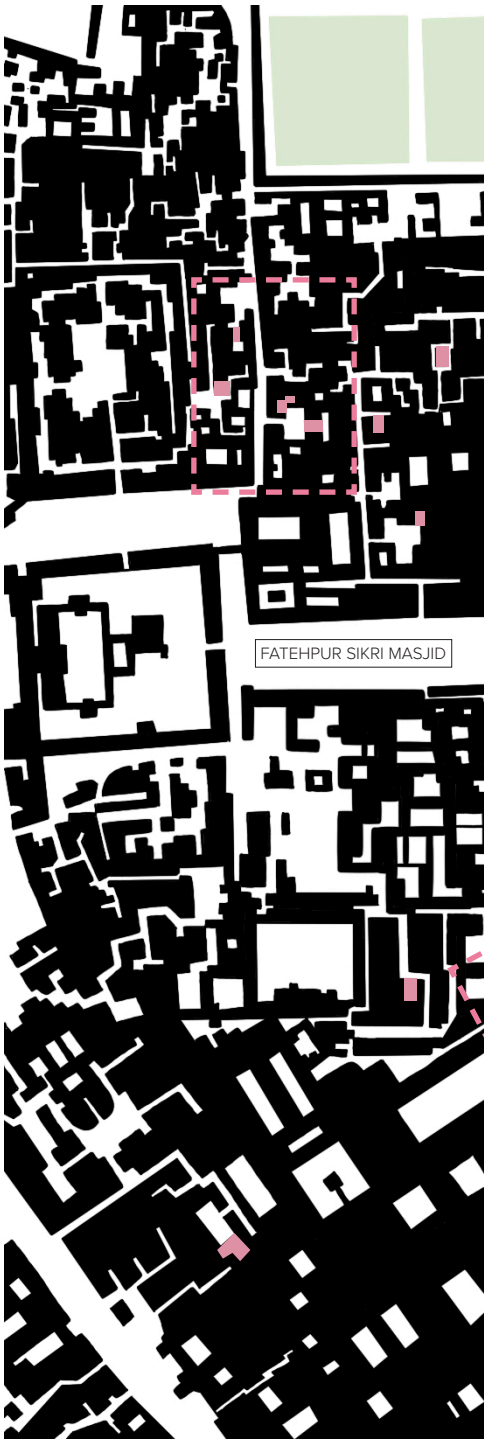
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Figure 36. Axonometric of small Punjabi cloth bazaar based on sketches done in Multan, 2024. Drawn by author.



1:
250

Figure 37. Axonometric of a typical kharkhana workshop based on historic etchings. Drawn by author.



1:
2000



Figure 38. Nolli map of Shahjahanabad illustrating the Chandni Chowk Bazaar and its surrounding urban fabric with bazaars and kharkhanas highlighted. Drawn by author. Data from Swapna Liddle's Shahjahanabad: Mapping a Mughal City.

INTRODUCTION OF POWER LOOMS

In the eighteenth century, the East India Trading Company mutilated thousands of cotton weavers in Bengal, by way of cutting off their hands and tongues, to create a market for British manufactured cloth, captured in this correspondence by Lord William Bentinck – the first governor general of the British colony of India – in which he wrote, "The bones of the cotton weavers are bleaching the plains of India."[3] The company's goal was to destroy the Indigenous muslin tradition which cultivated impressive value across the world. By the end of the nineteenth century, this goal became an imperial mission, resulting in the diminution of South Asia's economy, loss of agricultural biodiversity and erasure of innumerable Indigenous textile traditions.

Power looms, one of the innovations which preceded the English Industrial Revolution, were large machines which required non-human power to run them and created a significant amount of fluff and vibrations. All the power looms used in British India from the early twentieth century were manufactured in industrial cities such as Manchester and Lancashire. They were imported on large ships to ports in Bombay and Calcutta, then transported inland to provinces such as Punjab via rail. British lawmakers offered Indian industrialists significant subsidies and rebates to buy English made power looms and expand their mills to accommodate for the new machinery.[4] Power looms flooded the market with machine made cloth outcompeting handwoven goods. Change in consumer preferences coupled with the high taxes lawmakers imposed on handwoven goods rendered hand weaving obsolete and limited weavers to either a small luxury market or utilitarian cloth such as *khaddar*.

Since utilitarian cloth such as *khaddar* was mainly purchased for domestic use, there was a ceiling to how much a weaver could charge or creatively work their cloth. This diminished the art form of traditional weaving and confined weavers into low income work with little opportunity for craft or reward. Many weavers abandoned their practice and took on meager jobs such as selling cigarettes on the streets.[5] Weavers' dens in Punjabi urban centres declined, being sold for storage or reducing to small units which became less and less visible in the urban fabric of cities. Previously located close to *bazaars* in order to easily conduct business with textile merchants, the need for collaboration disappeared when merchants began buying and selling English cloth.



Figure 39. William Simpson. Thugs in the School of Industry, Jubblepoor. Yale Center for British Art, B1975.3.263. Accessed December 2, 2024. https://commons.wikimedia.org

Those units were more valuable as storage spaces so weavers' retreated into cramped studios in old, pre-colonial neighbourhoods without customer facing store fronts. Many weavers could not afford dedicated studio spaces so, if their living accommodation afforded it, they moved their looms into their homes.

3. Karl Marx, Capital: A Critique of Political Economy, vol. 1, trans. Ben Fowkes (London: Penguin Classics, 1976), 554.
4. Broadberry, Stephen, and Bishnupriya Gupta. "Lancashire, India, and Shifting Competitive Advantage in Cotton Textiles, 1700-1850: The Neglected Role of Factor Prices." The Economic History Review 62, no. 2 (2009): 279–305.
5. Tirthankar Roy, The Economic History of India, 1857–1947, 4th ed. (Oxford: Oxford University Press, 2011), 72–75.

The introduction of machine woven fabric into the material culture of Punjab came with social conditioning which encouraged European fabrics, cuts, styles and garments over traditional textile sensibilities. At the turn of the century, a class divide began manifesting in South Asian textiles. In cities, you began to see the emergent middle class wear suits, pants, shirts, dresses and bright, artificial colours. Saris, dhotis and turbans began disappearing from urban style while the collared shirt gained immense popularity.[6]

These changes were less evident in Punjab's rural landscape, where most people continued to wear dhotis, kurtas, shalwars and use shawls to keep themselves warm. Dressing like Englishmen and using British cloth was a privilege which denoted success, education, and financial prosperity in the person wearing it. This further derogated the handwoven cloths of India and pushed them out of public favour and fashion. Eventually, only very coarse utilitarian cloth and high end, generational garments remained within the hand weavers' realm. Fabrics which detailed the garment landscape of South Asia began disappearing, with multiple weaving traditions being lost to time due to the deskilling of hand weavers.

The mechanization of weaving during British rule was done not only in disregard for hand weavers, but with a derogatory outlook on the value and quality of their labour and expertise. British colonists implemented heavy import taxes on Indian textiles going to Britain, while relaxing the taxes imposed on British textiles imports into South Asia. They held exhibitions of South Asian clothing in London cities and published catalogues with similar material to encourage and inspire British textile manufactures in producing goods for the South Asian market.[7] Subsequently, nineteenth century English literature compared weavers to children, asserting that the cloth woven by hand versus that woven by a machine is akin to a novel written by a child compared to one written by a celebrated adult novelist. Colonial education in British India began promoting this value system to native Punjabis, particularly wealthy, urban native people. The production of space during British occupation was predicated on the destruction of native systems. The architecture of the colonial framework reimagined native individuals as units of labour. The body itself became a contested space, stripped of agency and subsumed within a framework of industrial exploitation.

Through this subjugation, native populations in industrial hubs were coerced into providing their bodies to labour for imperial capital, forced to relinquish their identities and survival under the oppressive weight of colonial occupation. The provinces of Bengal and Punjab, which were the farming and processing epicentres of the colony, experienced the most concentrated labour exploitation and working class plight, with more than three million farmers dying from starvation, and hundreds of thousands of others passing away from the cold, unable to properly clothe themselves over the course of two years.[8] Thin, barely clothed bodies became the oriental representation

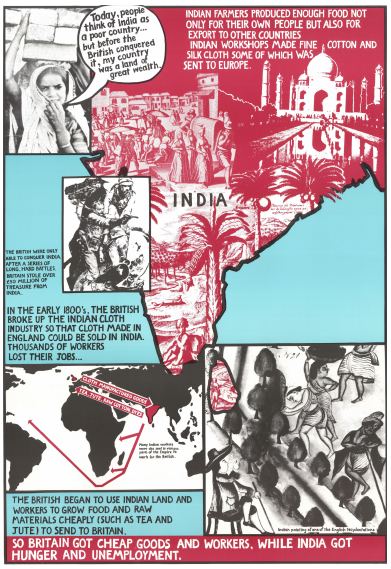


Figure 40. Antifa Propoganda Poster. Poster Collective London. 1979.

6. Gupta, Charu. "'Fashioning' Swadeshi: Clothing Women in Colonial North India." Economic and Political Weekly 47, no. 42 (2012): 76–84.
7. Bishnupriya Gupta, "Competition and Control in the Market for Textiles: Indian Weavers and the English East India Company in the Eighteenth Century," How India Clothed the World: The World of South Asian Textiles, 1500-1850, 2009, 281–306.

of native South Asians in the mind of European imperialists, subconsciously affirming the necessity of native suffering for the benefit of the metropole.

Historically, cotton was first turned into fabric by South Asians during the period of the Indus Valley civilizations. It was the native population of South Asia that created cotton textile production, perfected it into a highly valued global product and taught communities across the world to implement the knowledge into their economies. Pre-colonial cotton cultivation's grass roots framework allowed everyone to access quality textiles. By the 1940s, wartime policies had surged the price of cloth in Punjab by 600%, making it unaffordable for many people to clothe themselves or their families.[9] By the end of British occupation, the material which was transformed and perfected by native South Asians was denied to them, leaving many unable to clothe themselves enough to survive the cold. The introduction of industrial capitalism, characterized by exploitative labor practices, disrupted the spatial and social frameworks of local economies, dismantling systems of communal production and equitable distribution.

8. Gupta, Charu. "'Fashioning' Swadeshi: Clothing Women in Colonial North India." Economic and Political Weekly 47, no. 42 (2012): 76–84.
9. Susan S. Bean, "Gandhi and Khadi, the Fabric of Indian Independence," essay, in Cloth and Human Experience, 1st ed., vol. 1 (London, UK: Penguin Books, 1991), 356–76.

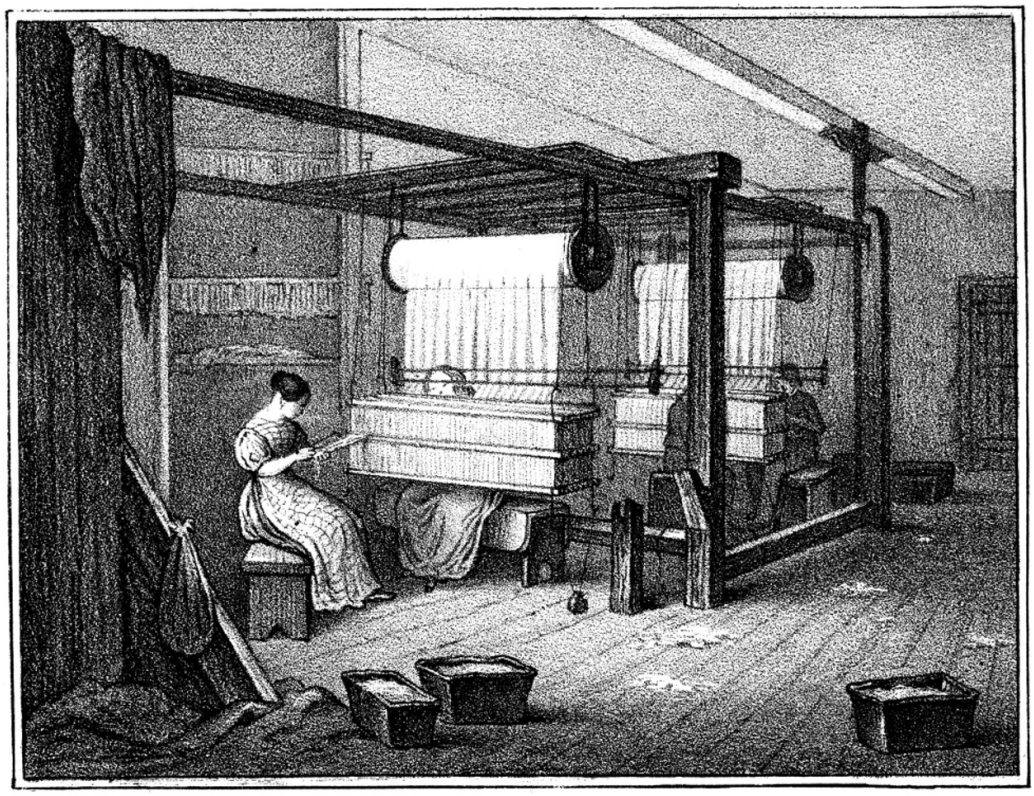


Figure 41. Women and children are working at large cotton looms. Lithograph after J.R. Barfoot. Wellcome Collection.

THE KHADI MOVEMENT

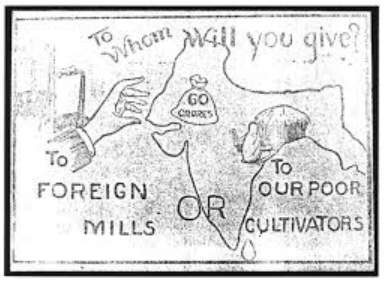


Figure 42. "To Whom Will You Give?" Khaddar Bulletin cover, 1931.

In order to resist colonial ruin, native communities began organizing to boycott British made cotton goods and only buy from native hand weavers.[10] From the beginning of the century, a decolonization movement grew to dominate the political discourse in native South Asian society. The prosperity of British India's textile industry left an impression on native society's political discourse, particularly in reference to decolonization. Those invested in anti-colonial ideas pointed to industrial prosperity coupled with working class destitution as a symptom of colonial plundering and imperialist exploitation. As this political perspective grew popular amongst native communities, cotton mill workers gained a realization of their vital value within a larger global economy. Mill workers became charged with a sense of justice, which motivated hundreds of thousands of workers to strike regularly for years in protest of class inequality and labour exploitation. In solidarity with mill workers, in order to undermine the British colonial occupation, Mohandas K. Gandhi appealed to all native Indians to stop buying imported cloth and start buying handwoven Indian cloth, which at the time, was mainly only utilitarian cloth such as *khadi*.[11]

In 1925, Gandhi began the All-India Khadi Board, which collected donations from wealthy native Indians to build weaving institutions and subsidize hand weaving. In order to create a supply of yarn for these weavers outside the British economy, he encouraged people to begin hand spinning at home on a charkha. To show his commitment to the Khadi Movement, Gandhi would often sit at a *charkha* and spin yarn during his political rallies.[12] The charkha came to represent the decolonize movement so effectively, that it went on to be the central symbol in the modern Indian state's flag. From the aspect of withholding one's body in order to render it a tool of resistance by denying colonial production and labour coercion, millions of industrial workers took part in strike action. It became a well exercised tool of collective resistance which effectively undermined the colonial economy. However, the Khadi Movement relied on the individual to actively take part in collective resistance by engaging with processes fractured in the past. This proved to be more complicated, leading to inequities peering into collective organization. Gandhi postulated that if every native who was able and could afford to, dedicated a small portion of their time to spinning yarn at home, and donated their spun yarn to local hand weavers, South Asia would be able to revive its dying hand weaving industries, once again becoming independent in their textile production, and thus the price of cloth would come down and no Indian would have to freeze to death in the cold. Additionally, if everyone, even those who were unable to spin yarn for donation, boycotted British cloth, and committed to buying handwoven desi cloth, the price of British cloth

10. Susan S. Bean, "Gandhi and Khadi, the Fabric of Indian Independence," essay, in Cloth and Human Experience, 1st ed., vol. 1 (London, UK: Penguin Books, 1991), 356–76.
11. Peter Gonsalves, Clothing for Liberation: A Communication Analysis of Gandhi's Swadeshi Revolution (Los Angeles: SAGE, 2010), 100–102.
12. Peter Gonsalves, Clothing for Liberation, 89–96.

would also fall. The championing of hand weavers was central to the larger Swadeshi Movement, an organized movement of colonial resistance which urged native citizens to buy locally made products and boycott British goods. The Khadi Movement sought to use handwoven cloth as a symbolic material to embody the growing sense of cultural nationalism. As the two world wars disillusioned the vast majority of native people from the British dream of progress and capitalism, many sought to resist colonial cultural conditioning by recognizing, engaging and celebrating native culture. As millions of urban labourers struggled to feed their families and clothe themselves through the cold nights, the narrative of the rural Indian moving to the city for a factory job was propagated to be resisted nationally through a deliberate approach to reconnect with the folk traditions and communal values of rural India, what was believed to be the pure and untouched India. The Punjabi farm, with domestic spaces of textile production, was planted in the minds of nationalist Indians as the symbolic representation of an independent India. The charka, or spinning wheel, was at the heart of this interior manifestation. Challenging the imperial representation of a thin, barely clothed native Indian, Gandhi's promise was to clothe the entire nation by bringing native Indians back to their authentic roots and severing their dependence on their colonial overlords.[13]



Figure 43. The Khadi World cover, 1951.

While the Khadi Movement was financed by mostly wealthy Hindus, most weaving in Punjab was done by Muslims in historic urban centres. This contention between the Hindu elite and the Muslim urban proletariat reared its head in 1942 when riots in Amritsar saw mobs burn Muslim weavers' handlooms, and the All-India Khadi and Village Industries Board refusing to fund replacements because the weavers were buying yarn from mills and producing cloth for the luxury market.[14] The reality was, Indians weren't actually setting up charkas in their homes and spinning yarn to donate to weavers. The majority of yarn available on the market was still mechanically spun mill yarn, and due to the cost of buying it, weavers were forced to cater to a luxury market or else not work and starve. In fact, due to the obsolescence of hand weaving, the majority of weavers who still operated a practice had to cater to a luxury market. These weavers were responsible for keeping alive historic textile traditions which remained relevant and in demand across the subcontinent. Despite the Khadi Movement being impactful and effective, it was not perfect and emphasized the socio-religious, urban and rural class divide which had emerged in colonial South Asia.

The fact of the matter was that rural Punjabi communities had never stopped spinning yarn and weaving fabric, even if they had grown smaller, more impoverished and remained outside the nationalist spotlight. This rural persistence underscores the disconnect between the Khadi Movement's symbolic emphasis on spinning and the material realities of textile produc-

13. Peter Gonsalves, Clothing for Liberation: A Communication Analysis of Gandhi's Swadeshi Revolution (Los Angeles: SAGE, 2010), 5–7.
14. Talbot, Ian. "A Tale of Two Cities: The Aftermath of Partition for Lahore and Amritsar 1947-1957." Modern Asian Studies 41, no. 1 (2007): 151–85.

tion in rural South Asia. The people producing desi yarn and fabrics were rural community members or poor urban artisans, including lower caste Hindus and Muslims.[15] Situated within a framework that propagated a hierarchy amongst native society to further alienate the subaltern, the Khadi Movement was unable to effectively advocate for the diverse communities that engaged in the reality of its decolonial ideology. While wearing khadi became a widespread fashion statement of anti-colonial sentiment, what the movement failed to reinstate was the collective network of native labour needed for indigenous textile economies to succeed. Colonial and nationalist systems alike dehumanized laboring bodies, treating them as expendable units rather than integral participants in the body politic. Gandhi in fact threatened to abandon *khadi* if the weavers did not stop buying mill yarn, yet without any other option to make a viable living, the weavers ignored Gandhi's threat. This alienation fragmented the indigenous labour network essential for the success of native textile economies.

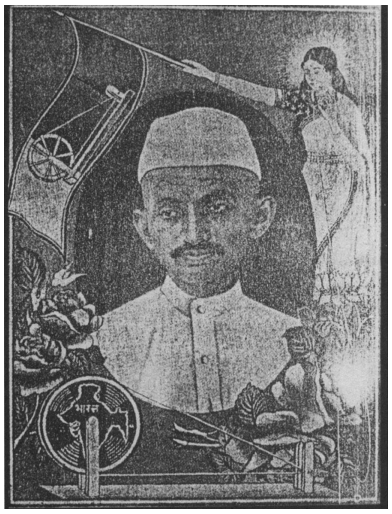


Figure 44. Gandhi and a woman spinning India. All-India Congress Khaddar Department cover, 1922.

Agrarian resistance occurred separate to public politics, due to its physical separation from urban centres, where the majority of public resistance played out. The 'subaltern' nature of agrarian politics was owed to the varied approach to colonial resistance which hinged on the fact that peasants did not have a central site of collection on which to organize, disrupt and demand. Kisan Sabhas, or 'farmers unions', propped up across rural South Asia as a communal response to socioeconomic plight. These unions helped distribute and ration food while organizing agrarian peasantry to resist oppressive policies.[16]

Farmers resisted in one of two ways – firstly and most commonly, in grassroots individual ways such as the popular movement of peasants stealing back grain from their landlords. Secondly, through collective organization in places of trading and storing, for example the 1943 farmers' protest at the Royal Grain Reserve in Bombay.[17] Historically, both methods of resistance often resulted in violent confrontation. In the case of the latter, farmers' protests heightened the unrest and public violence Indian urban centres faced, resulting in actionable solidarity with trade unions disrupting industrial work in the same cities.

The overlapping sites of native resistance denote the colonial network of resource extraction built under British occupation over the past few centuries. This network of extraction imposed on South Asia's native population a network of solidarity. Across regional, linguistic, ethnic, and religious lines, native people organized to debilitate and undermine the colonial occupation, and capitalist exploitation as an extension of it. The success of anti-colonial resistance rested in solidarity networks connecting native communities across the colony in a universal effort to fight their dehumanization and disempowerment.



Figure 45. Deserving Objects of Gratuitous Relief. Hooper, Willoughby Wallace. 1877. Photograph.Wikimedia Commons. Accessed November 28, 2024. https://commons.wikimedia.org/.

15. Abdul Jamil Khan, Urdu/Hindi: An Artificial Divide (New York, NY: Algora Publishing, 2006), 183–187.
16. Mukherji, Partha Nath. "The Farmers' Movement in Punjab: Politics of Pressure Groups and Pressure of Party Politics." Economic and Political Weekly 33, no. 18 (1998): 1043–48.
17. Dhanagare, D. N. "The Politics of Survival: Peasant Organizations and the Left-Wing in India, 1925-46." Sociological Bulletin 24, no. 1 (1975): 29–54.

Despite union attitude towards strikes being largely non-violent, mills often transformed into sites of violent confrontation during periods of labour resistance. Typically on the first few days of the strike, workers would organize a demonstration outside the mills they were employed at, carrying signs and chanting slogans to express their grievances to management. Mill owners, frightened about property damaged by potential violence, would ask the police to barricade and patrol the vicinity of the mill as long as the threat of a demonstration remained. Often times when the strike was taking place across the city at multiple mills a curfew would be set and police would be stationed in working class neighbourhoods in anticipation of public violence.

Heavy police presence punctured these industrial spaces, and within the spatial relationship of 'worker' and 'boss', replaced the employer with the colonial state. This spatial transformation struck protesting workers with terror and aggression through which a palpably volatile environment was created where all actors were highly defensive. Violence in these public spaces began to take on deeply religious undertones after the First World War. Cases of mass violence occurred across the subcontinent, but Punjab, like the United Provinces, Bengal and Hyderabad, was a concentrated site of unrest.[18] Networks of solidarity became fractured by divisive colonial governance and its reiteration in the nationalist movement's identity politics. The individual was no longer between working with or against a colonial framework of occupation, now each native body had been rendered ideological fodder for different community's pursuit of nation building.

Religious divisiveness had always played a part in the colony's public politics, with religious quotas built into the colonial organization of native subjects. One example was Punjab's legislative assembly, where Hindus reserved the majority of native seats, followed by Sikhs and Muslims. Similar divisions were applied to school funding, university admissions, government jobs and real estate. These divisive policies socially fractured native communities. Under British occupation, the continental Hindu majority gave way to a Hindu supremacist ideology which vilified Muslims, the largest continental minority, as invaders equivalent to British occupiers and denied Muslims the identity of 'native'. In turn, Muslim communities became defensive and insular, leading to widespread religious intolerance towards Hindus. The religious binary of Hindu-Muslim formed through the process of colonization, placing other religious minorities along the spectrum, representative of their affirmation or opposition to mainstream Hinduism. This social landscape manifested the idea of Muslim statehood, which can be traced back to the 1910s through the writings of the Urdu poet, Muhammad Iqbal. As undertones of Hindu nationalism grew within the mainstream decolonization movement, identity politics took hold in the middle class. Through Iqbal's writings, the ideology

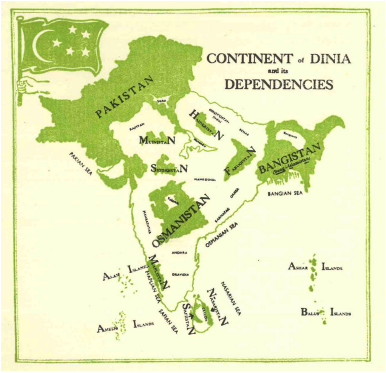


Figure 46. Continent of Dinia and its dependencies, sourced from Rahmat Ali, The Millat & the Mission. Cambridge: Pakistan National Movement, 1944.

18. Yasmin Khan, The Great Partition: The Making of India and Pakistan (New Haven, CT: Yale University Press, 2017), 128–142.
19. Shrimali, Krishna Mohan. "The Formation of Religious Identities in India." Social Scientist 45, no. 5/6 (2017): 3-27.

of a Muslim state took hold in public discourse, particularly amongst middle class native Muslims as an ideal they strived for at the end of their anti-colonial struggle.[19] Within the question of what a post-colonial South Asian subcontinent would look, the concept of the Muslim state came into the native imaginary, promising some native bodies salvation whilst threatening others with displacement.

The process through which a South Asian Muslim state transformed from a post-colonial ideology to a territorial reality was unprecedentedly violent. Historical cases such as the Sykes Picot Agreement, the Balfour Declaration and the Partition of Ireland littered the native conscience with paranoia, yet hardly spoke to the gravity of what was to come. In the years of 1946 and 1947, when a two-state solution appeared to be the likely outcome to British exodus, the palpably intense energy directed by native society as a whole towards ending colonial occupation imploded into communal violence.[20] Where previously labour resistance created unrest, communal violence ruptured in multi-faith regions such as Punjab and Bengal – the two most vital sites for farming and industrial work under British occupation. Wide-scale, ethnic cleansing erupted across the colony almost immediately. In the province of Punjab, the most concentrated site of communal violence, entire villages were killing their neighbours in hopes of changing local census demographics to keep their land on their desired side of the border. The city of Amritsar burned for fourteen days after an outbreak of religiously motivated riots.[21] The province became ground zero for both ideological and territorial confrontations. Virtually all Punjabis wanted the region to remain united, yet the debate remained on which side of the border it should be. Once it became clear that united Punjab was unlikely, province-wide communal violence broke out. Entire communities were wiped out within a night. Homes, businesses, neighbourhoods and markets were razed by hate fuelled mobs. Militant groups ethnically cleansed the region in hopes of changing its demographic makeup enough to bend the border.

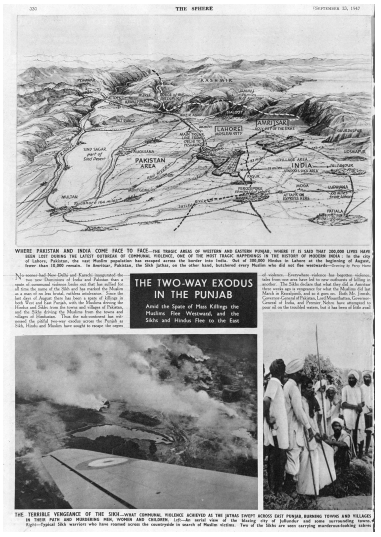


Figure 47. "Reporting of the Partition of India." The Sphere, September 13, 1947, page 330. Accessed December 2, 2024. https://archive.org/.

The body became the scale through which territorial disputes were enacted. Violent mobs sought to redraw borders through the physical destruction of native bodies in order to manipulate colonial land practices for their own territorial gain. This act of power geometry weaponized the body as a tool of spatial reorganization. In multi-faith regions like Punjab, communal violence targeted not just bodies but the architecture of coexistence—homes, markets, neighborhoods, and villages. These acts of destruction were deliberate efforts to erase the physical and social memory of shared lives, turning contested spaces into barren zones of ideological division. The border itself became an architectural intervention, forcibly reconfiguring spatial relationships. Partition's violence fractured the body politic of Punjab, where diverse communities had long coexisted. In this context, the body became a site of

20. Yasmin Khan, The Great Partition, 63–68.
21. Talbot, Ian. "A Tale of Two Cities: The Aftermath of Partition for Lahore and Amritsar 1947-1957." Modern Asian Studies 41, no. 1 (2007): 151–85.

power and vulnerability, its movement and existence shaped by the shifting geometries of territorial and ideological conflict. The violent transformation of native public space in Punjab evokes geographer Doreen Massey's work, which considers space dynamic and relational rather than fixed or static.[22] In the process of Partition, communities, regional identities, ancient tribes, and languages were second to codifying a religious divide within the states' boundaries. What Massey refers to as "power geometries" can be observed in the weeks approaching the given date of British India's Partition, when millions of people began to migrate across the assumed border. The concept of "power geometries" highlights the privilege of mobility certain bodies have, or in this case, are denied, due to systems of control embedded within global networks. It is estimated more than sixteen million people migrated due to the Partition of British India, yet today, movement across the border is made virtually impossible for native South Asians whose ancestral ties lay in another nation-state's territory.[23]

During Partition, the body became the fundamental scale for delineating belonging. Whether one was Hindu, Muslim, or Sikh determined their fate in the new territorial boundaries. Religious identity superseded all other markers, reducing the rich diversity of South Asia into binaries enforced through violence. These fractured identities mirrored the jagged and arbitrary lines Radcliffe drew through landscapes and communities. Communities, regional identities, ancient tribes and languages, were all second to codifying a religious divide within the states' boundaries.

The division subsumed regional identities and cultures under the monolithic constructs of "India" and "Pakistan." This reduction fragmented the body politic, leaving diverse tribes, languages, and communities dislocated and marginalized. The Radcliffe Line itself, drawn without regard for human or natural geographies, became an enduring symbol of sectarianism. Its arbitrariness imposed a violent order on bodies and spaces, manifesting in communal hostilities that persist to this day.

22. Doreen Massey, Space, Place, and Gender (Minneapolis: University of Minnesota Press, 1994), 146–156.
23. Abdul Jamil Khan, Urdu/Hindi: An Artificial Divide (New York, NY: Algora Publishing, 2006), 210–213.

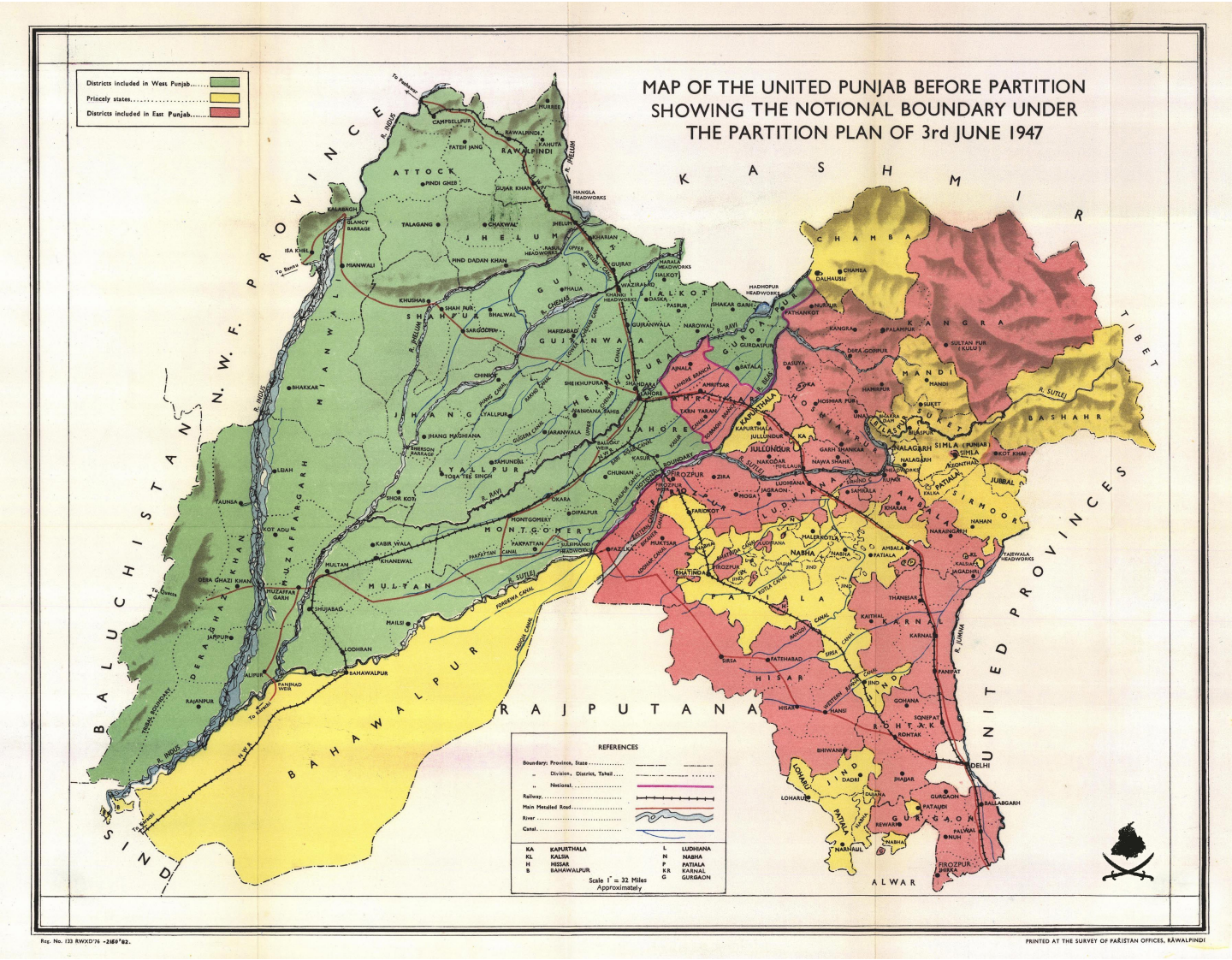


Figure 48. Panjab Before the Partition, 1947. Accessed December 2, 2024. https://archive.org/.

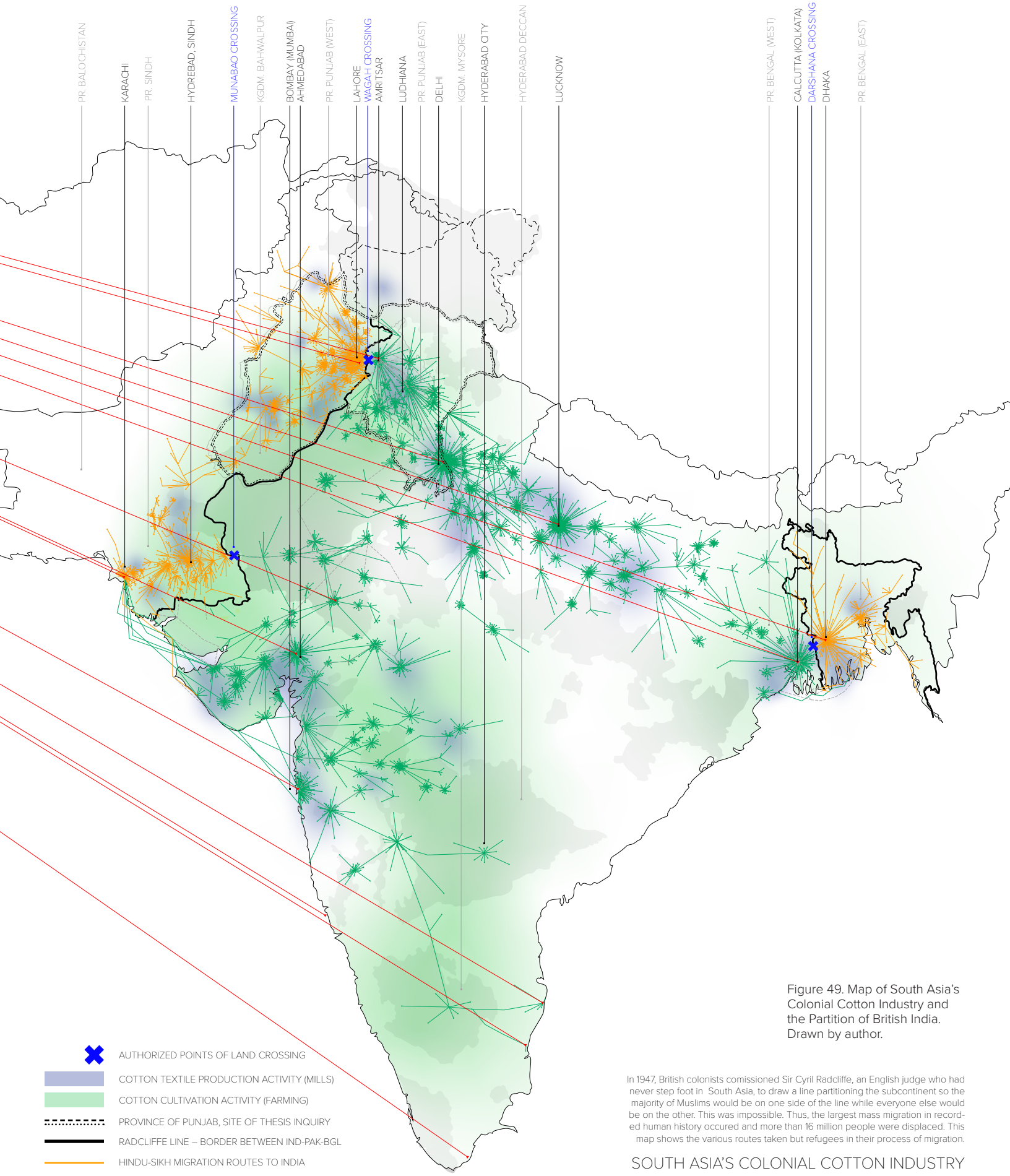


Figure 49. Map of South Asia's Colonial Cotton Industry and the Partition of British India. Drawn by author.

In 1947, British colonists comissioned Sir Cyril Radcliffe, an English judge who had never step foot in South Asia, to draw a line partitioning the subcontinent so the majority of Muslims would be on one side of the line while everyone else would be on the other. This was impossible. Thus, the largest mass migration in recorded human history occured and more than 16 million people were displaced. This map shows the various routes taken but refugees in their process of migration.

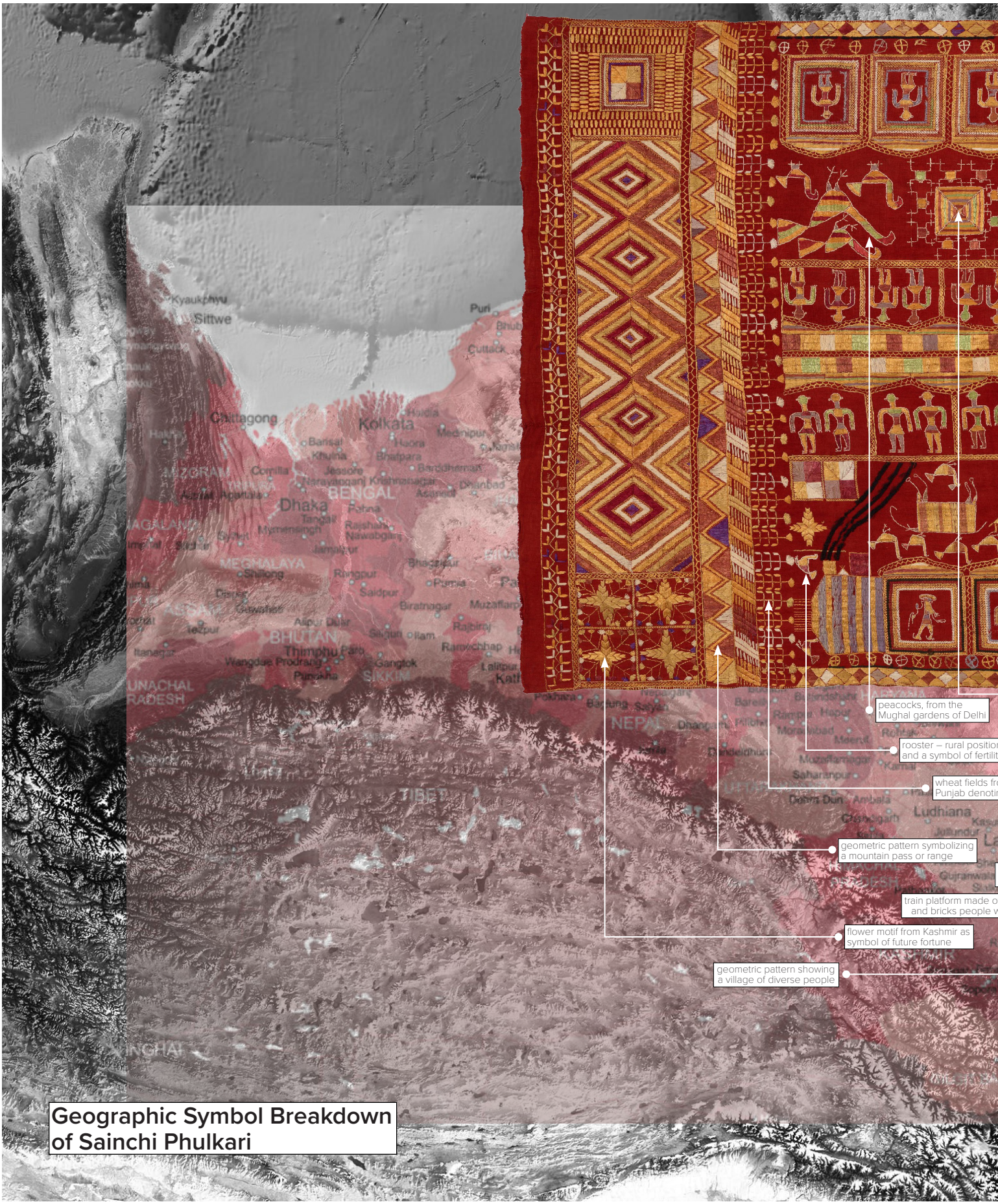
SOUTH ASIA'S COLONIAL COTTON INDUSTRY AND THE PARTITION OF BRITISH INDIA

August 1947 to 1950



Figure 50. Kamalia handweaving in a courtyard in historic Lahore, 2005. Flickr.

Through making the artifact, I learned how to hand weave on a table loom. The work took almost a hundred hours. The patterns remain simple and geometric like the majority of utilitarian cloth woven by South Asian communities. While a machine loom could produce similar work within a few minutes, the process of weaving allowed me to be selective and singular in how I wove. The changing patterns descending the artifact's length reflect the transformation of *khadi* as an unassuming material of everyday life to an anti-colonial symbol. Ultimately, *khadi* defined a movement towards decolonization rooted in labour resistance. Through industrial capitalism, native life was devalued and then destroyed in order to make way for colonial plunder. The framework of factory economics allowed power looms to displace the hand weaving industry, leading to the further diminution of native craft and world building. In order to resist destruction, native communities organized to reinstate local economies and decrease dependency on colonial supply chains. However, the oppressive nature of British land practices seeped into the decolonization discourse, mirrored in the identity politics of the nationalist movement. Colonial systems of extraction transformed native bodies into commodities of labour, stripping them of their agency, autonomy and devaluing their traditions. This dehumanization peaked and persisted through the border between India and Pakistan which imposed artificial identities on a diverse collection of people. Despite fracturing land practices, native South Asians persisted in their craft, continuing to embed meaning into textiles and use them as mediums of world building and memory.



Geographic Symbol Breakdown of Sainchi Phulkari



Figure 50. Collage of phulkari and South Asia. Made by author.

Ornamentation – The Artifact

THE SARI IN LAHORE

Both my grandmothers were born in India and died in Pakistan. They grew into women through the act of adorning of saris. In central India, a girl wore shalwar kameez until she reached maturity then began wearing saris. In their youth, my grandmothers wore printed, soft saris, which became embroidered once they were married. After the death of her husband, my maternal grandmother, Musharraf, stopped wearing bright colours and primarily wore white with only subtle white kari on top. When they immigrated to Pakistan, they were considered strange for wearing saris whereas most people wore shalwar kameez. Regardless of people's judgement, both my grandmothers continued to wear saris as their primary form of dress till their deaths.

The sari, typically eight meters long and a gaz wide. Fundamentally a long piece of cloth, the sari was an adaptable garment of dress which changed form from region to region, across South Asia. While Punjabi women and other cultures in northern regions, typically wore shalwar kameez, the sari was commonly seen in warmer regions or at auspicious events such as weddings. Before British occupation, saris were worn without blouses, draped and tied in various manners to suit the wearer's needs, climate and identity.

The ornamentation found on saris ranged from dyeing and printing to embroidery and complicated weaves. Unlike shawls, the sari was not a narrative driven medium of expression. The principles of sari embellishment kept handiwork in the mode of a border. The thickness, complexity, and format of the border varied in accordance to the wearer's identity, region of craft, and occasion. In the border, ornamentation symbolized concepts such as fertility, beauty, youth, and wealth.

The daily act of wearing a sari distinguished my grandmothers from their adopted environment. Their garments identified them as migrants, imbuing not the material itself but the act of tying it in a specific way every day, with a subscription to partition. Individual traditions which had developed over centuries of cultural evolution were coopted by state governments in order to construct a national identity. By nationalizing cultural traditions each country built an artificial history to substantiate its existence. The textile practice became a vessel of memory and world building.



Figure 51. My maternal grandmother, Musharaf, in Goa at the beach in a sari, 1988. Photograph by author.

I wanted to meaningfully connect with the textile traditions this research is enfolded in. This is in efforts to connect with both the material knowledge of this research and my own matrilineal textile traditions.

I'm engaging in an auto-ethnographic approach to inquiry, exploring my connection with my grandparents to understand how partition unfolded in families, communities and everyday spaces. The chapter acknowledges and unfolds through the subjective lens of my experience as a grandchild of partition-era migrants. By practicing the textile traditions my grandmothers once followed, I found a meaningful way to connect with their lives, despite their scarce presence in formal records.

I want to start with my grandfather's migration story from the summer of 1947, and then follow that into an exploration of my grandmothers as migrants and textile artisans. The synthesis of my family's story and South Asia's textile narrative is imprinted on the textile artifact. The practice of making the artifact served as a methodology of learning through making.



Figure 52. Top of the textile artifact showing the source of the Sutlej River. Photograph by author.

MY GRANDFATHER'S 700 KILOMETER JOURNEY

This fall my father and I walked the perimeter of Lahore Fort. He was returning to his hometown after 15 years. When we came to the Hazuri Bagh, a garden constructed in 1813 under Ranjit Singh's rule, he softly recalled, "my father and his brothers slept here when they first arrived."

My father was born in Pakistan and my mother was born in India. Both their families lived in the United Provinces before Partition. My mother's family owned land in Bareilly that they rented to tenants. My father's family lived in a single room home and worked in mills. When the colony was partitioned and there was a call to form a Muslim state, the public unrest caused destruction in working class neighbourhoods. The context within which working natives operated presented constant danger to their lives without safe spaces of reprieve. Working-class neighborhoods, already destabilized by colonial policies, became zones of acute vulnerability during Partition's violence. Contrastingly, those who owned property had monetary stake in the land which often manifested in a space of retreat. Property granted people rights, and it was one of the primary reasons my mother's family stayed in India. Similarly, the plight of my paternal grandfather's family was the motivation behind his migration to Lahore. His socioeconomic context severed him from his regional community. The scale of Partition's displacement resulted in the erosion of distinct regional identities, with the working class being more vulnerable to fracturing national policies.

My grandfather migrated from Moradabad, India to Lahore, Pakistan days after the countries were formed. As a fourteen year old, he walked from Moradabad to Delhi with his two older brothers, took a train to Amritsar and another one to Lahore. He and his two older brothers were amongst the handful of people who arrived safely in Pakistan. The other two thousand passengers were killed on route by angry mobs and local militants. The five hundred kilometre journey took him over two weeks.

The Moradabad my grandfather left behind was an industrial city seeped in political turmoil.[1] For generations, the city passed from one ruler to the next, regularly being plundered and invaded, until local landowners incurred vast amounts of debt with the British Empire for hiring troops to defend against invaders. Unable to pay these debts, the ruling authority of Oudh state ceded their territory to the British, ushering in an era of extensive industrialization.

By the twentieth century, Moradabad was a capital of textile production, where British brands such as Burberry and Marks & Spencers, along with the Royal Armed Forces, had essentially all their cotton goods produced. The appeal of Moradabad's textile industry was the low cost of labour and the high quality of cotton used, which was imported from the neighbouring province of Punjab. The city's mills were infamous for their poor ventilation, unsafe working conditions, and low pay. With a long history of conflict between Moradabad's civilians and British armed forces, the colonial authority

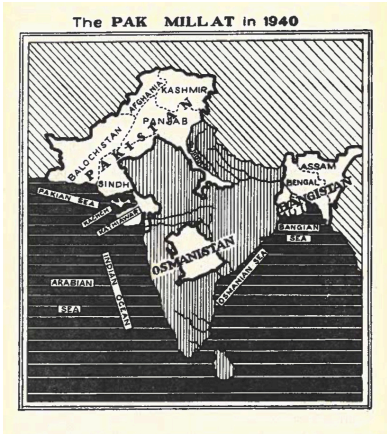


Figure 53. Continent of Dinia and its dependencies, sourced from Rahmat Ali, The Millat & the Mission.

Cambridge: Pakistan National Movement, 1944.

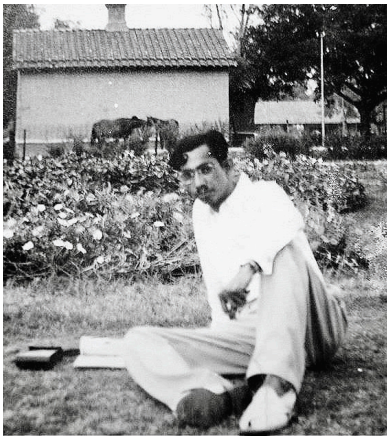


Figure 54. My paternal grandfather, Zahid Zubairi, in Race Course Park, Lahore, 1950. Photograph by author.

1. Gyan Pandey, The Construction of Communalism in Colonial North India (Delhi: Oxford University Press, 1990), 17.

imposed oppressive policies which banned unionization and legalized sixteen hour shifts at government mills while maintaining an aggressive military presence in its neighbourhoods.[2]

For families like my father's, the migration to Lahore meant leaving behind not only a home but also the cultural and ecological knowledge tied to their place of origin. Partition represented an extension of colonial epistemic violence, forcing the mass displacement of people from their ancestral homes. This migration severed communities from the land, disrupting the transmission of knowledge tied to specific geographies. Gayatri Spivak's concept of epistemic violence, provides a critical framework for understanding how the subaltern is often spoken for but rarely allowed to speak.[3] In the context of Partition, the working class's experiences and knowledge were overwritten by nationalist narratives that focused on elite actors and religious identities. The epistemic violence here lies in how the experiences of the marginalized were subsumed under monolithic representations of the nation-state.

My grandfather, Zahid Hasan Zubairi, was fourteen years old when he began learning Punjabi in a refugee camp. He was one of five hundred thousand Muslims who had fled to Lahore, and one of fifteen million native South Asians who had been displaced after the Partition of British India in 1947. When he came to Lahore, him, his brothers and forty thousand other refugees slept in the historic ruins of the Lahore Fort. Here they became acquainted with other refugees, many of whom were Punjabi Muslims migrating from East to West Punjab. The refugee camp was operating on the efforts of the community living in Lahore as well as the solidarity networks which formed amongst the refugees themselves. Many of the women who had fled carried with them an essential tool such as a mortar and pestle, matani churner to make lassi, masala daba, or sewing kits with cloth.

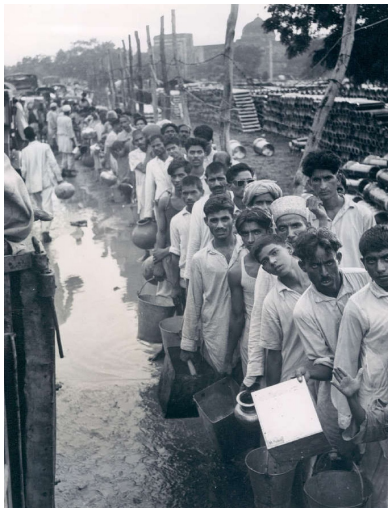


Figure 55. "Refugees at a Camp in Delhi Waiting in Line for Water." News photo, 1947. Wikimedia Commons. Accessed December 2, 2024. https://upload.wikimedia.org/.

Homi Bhabha's notion of the "third space" explains how displaced individuals use objects to negotiate between lost homelands and new realities. By preserving or recreating practices tied to these objects, they sustain continuity and construct new worlds in exile.[4] Objects like utensils, fabrics, or religious texts enable displaced individuals to reimagine their former lives, fostering a sense of belonging and communal identity in unfamiliar environments. According to Edward Casey, objects function as mnemonic devices, reconstructing connections to lost landscapes.[5] They serve as portable representations of place, allowing displaced individuals to metaphorically "dwell" in their memories of home despite physical uprooting. During Partition, carrying objects reflected both trauma and agency. For elites, heirlooms signified status and continuity, while for the working class, practical items ensured survival. These objects challenge dominant historiographies by preserving subaltern voices and everyday experiences.

2. Gupta, Charu. "'Fashioning' Swadeshi: Clothing Women in Colonial North India." Economic and Political Weekly 47, no. 42 (2012): 76–84.
3. Gayatri Chakravorty Spivak, "Can the Subaltern Speak?" in Colonial Discourse and Post-Colonial Theory, ed. Patrick Williams & Laura Chrisman (New York: Columbia University Press, 1994), 67.
4. Homi K. Bhabha, "The Commitment to Theory," in The Location of Culture (London: Routledge, 1994), 55.
5. Edward S. Casey, Remembering: A Phenomenological Study (Bloomington: Indiana University Press, 1987), 181–191.

MY GRANDMOTHERS: THE TEXTILE ARTISANS

For millions of others displaced like my grandparents, textile production became a medium of memory and world building. Fabric, as an architectural tool, was used to physically and metaphorically make spaces of belonging. Different pieces replicated colours, patterns, and motifs associated with lost homes, effectively translating a sensational presence of home into new environments. Even in refugee camps, tailors, sewing machines, hand looms, and scrap fabric were in high demand, demonstrating a significant connection between textiles and human agency. Engaging with textile production became an act of spatial practice, anchoring people to the present while connecting them to the past. Architecturally, this parallels the creation of spatial memory through ornamentation, theorizing textiles as "epistemic constructs", encoded and transmitting knowledge. Additionally, production of textiles as a medium for preserving regional identities and oral histories gave displaced people autonomy in defining their narratives and shaping their own worlds.

Both of my grandmothers were skilled textile artisans. My maternal grandmother was fond of knitting, crocheting, and sewing, and made me all my clothes from ages zero to four, fashioning dresses and pants out of my mother's garments. She insisted the fabric that she used for my clothes previously belonged to my mother because of the memory the fabric held. By having me wear fabric that my mother previously wore, also sewn by her, she felt this connection and affirmation of her maternal lineage. She felt she was protecting us and keeping us close together.

My paternal grandmother was known for her embroidery work. Though testimonies from family members tell me she could do virtually anything with yarn or cloth, from knitting to dyeing to mending, she earned her living by embroidering. She wasn't formally trained or ever recognized as a textile artisan, rather the necessity to provide for her children and family was what brought her to the work. My grandfather, the breadwinner of the family, passed away of lung cancer at the age of forty one, leaving two unmarried sisters, two children, and a wife with nothing more than a monthly pension of 400 rupees (equivalent to $300 in Canada today). Both of my grandfather's sisters were disabled, and one suffered from severe seizures.

My grandmother, Naushaba, sold the family house, moved everyone into a one bedroom apartment in Old Lahore and began embroidering wedding dresses and heirloom shawls to make ends meet. She would work all night on her embroidery, do her domestic work such as cooking, cleaning, and laundry during the day while walking the kids to and from school, and looking after her sister-in-laws.

By way of making clothing, my grandmothers imbued their values and ideals into garments literally protecting the bodies of their loved ones. Just as buildings shelter life and embody cultural identities, textiles operate as a mobile and intimate form of architecture that safeguards the body while possessing deeper cultural and emotional truths.



Figure 56. My paternal grandmother, Naushaba, on her wedding day, in a Benaresi silk gharara, 1955. Photograph by author.

The garments' protected our bodies from external forces, whether environmental, social or emotional. This makes textile a microcosm of spatial design and garments as extensions of built space – especially in a context where the individual is displaced from an architectural environment. My grandmothers, by engaging in historical practices, emotional relationships and material transformation, were architects of the body. Similarly, it can be argued that garments can be read as texts, encoding cultural memory and personal agency. Feminist theory highlights how objects crafted by women, especially textiles, serve as repositories of embodied knowledge. The act of making textiles became a mode of exercising agency for my grandmothers. By centering care in their spatial and material practices, their place making was predicated on the wellbeing of the community, resisting imperial modes of knowledge which prioritize cultural capital over human life.

The persistence of craft traditions granted to Indigenous people a mode of both communal care and cultural preservation. These practices fundamentally prioritized native life in the present over native product of the past, realigning modern modes of cultural preservation to admire and champion nativity. Furthermore, textile production, relying on individual engagement, empowered the personal narrative, undermining the state narrative which sought to impose itself on the collective. Partition, as a spatially disruptive act, displaced traditional knowledge along with people. By reviving native textile traditions, migrants resisted the colonial narrative of rupture. Textiles, as mnemonic devices, carried layers of history within them, communicating various aspects of ancestral landscapes in numerous modes throughout its transformation from raw cotton to finished garment. Not only was my grandmother's shawl a vessel of memory, but the thread used to embroider it, the warp and weft of the fabric, the yarn, all communicated knowledge from an ancestral landscape.

As textile artisans, my grandmothers used garments as a mode of silent storytelling. By dressing their loved ones in clothes made with care and intention, they embodied resilience, transforming acts of everyday labour into profound cultural contributions. To further this, not only were my grandmothers engaging in communal placemaking, they were also upholding a continuous cultural tradition of native cotton processing. Despite global imperial efforts to alienate and erase South Asia's indigenous cotton industry, native textile practices persist because of the "invisible labour" of individuals such as my grandmothers. And they are not alone. In every house, family, and community, there are textile artisans keeping South Asia's lost cotton landscape alive through placemaking and caring for others.

My aunt, a very bright pupil, dreamt of becoming a doctor. At the time, if you didn't go to private school, study English, and come from a wealthy background, becoming a doctor, engineer, lawyer, or any job considered "white collar" was challenging, especially if you were a woman.

My grandmother, despite never having finished high school herself, entirely supported and encouraged my aunt's dream. In Lahore, where power outages happen multiple times a day for hours on end, my financially struggling grandmother bought my aunt a desk, with a working lamp, and a small generator, to ensure she had the means to study at all times of day and night.

My grandmother herself, ended up losing her eyesight due to the strain she put on her eyes while embroidering at night, yet made it her priority for her daughter to have the means to succeed. At the age of fifty, my grandmother passed away due to complications in her diabetes. She worked up until six months before passing, stopping at her children's behest after they caught her accidentally stabbing herself with a needle multiple times while embroidering to the point of bleeding.

Despite embroidering to make money, my grandmother also worked with fabric as a hobby and was mildly famous amongst our family and neighbourhood for her craftwork. She would tailor for her neighbours for free around Eid, to help out in a pinch, or embroider simple ghararas to be more embellished for brides who couldn't afford more opulent dresses. She made sure all of my father's clothes were to his exact fit and made outfits for the whole family on Eid out of her own desire and imagination.

For both my grandmothers, textiles were a tool of agency and expression, with which they translated and manifested their interior worlds, their hopes, ideals and aspirations. Regardless of what mechanical tools they had available, both chose to engage in handicraft work as a means of self-expression and community preservation. They saw value in handiwork, dignifying the skill and time it took to make or mend a single garment as a manifestation of love. This material practice of love not only maintained strong networks of feminist solidarity but also preserved an ancient native tradition.



Figure 57. A collection of women from my mother's family including my maternal grandmother and great-grandmother in Rampur, India. My great grandmother is wearing a white cotton *gharara.* Most of the women are wearing printed *batik* saris. The two teen girls standing on either end are wearing *shalwar kameez* and a Western shirt-pant outfit. The two little girls (the one sitting on the floor being my mother) are wearing knee length dresses made from the scrap fabric of their mothers' saris. Boys are wearing printed Western attire. 1978. Photograph by author.

Inspired by the work of Christine Rogers in "The Needle as Medium: Using Embroidery to Speak for Ghosts", the last component of this research work sets out to synthesize gathered historical information into the process of making a cotton artifact.[6] Though my skills in textile processing were limited before this work, the act of learning handiwork perfected by generations of South Asian women provided a form of knowing which could not be understood in words. The cotton textile artifact began as a series of experiments to observe how each fabric, one being handwoven from desi cotton and the other being machine woven from American cotton, responded to Punjabi textile traditions of dyeing, printing, stitching and embroidery. Through the artifact, I gained a phenomenological understanding of making textiles within native praxis of production, particularly through interacting with a changing cotton form. This perspective emphasizes the fundamentally resistant nature of native communities preserving and practicing textile techniques and craft.

The cotton artifact is six meters long and a *gaz* wide. Incomparable to any standard format of architectural or spatial drawing, the size of the artifact denotes to two large scale formats used by women as mediums of recording and expressing – firstly, the shawl (bagh or khes), and secondly, the sari. It employs a number of key textile processes which defined South Asian cotton production before the nineteenth century and continue to be practiced today, both on the subcontinent and abroad. These include the dyeing practice of batik, the weaving practice of khes, the embroidery practice of phulkari. Each of these methods intervenes at varying stages of cotton production, allowing for layers of meaning to unfold through the artifact.

The family shawl, a long-abandoned tradition used around the eighteenth century to host multiple people on, in, or around it, became non-linear narrative driven recordings of the creator or wearer's life. Textiles of this nature are still found in regions such as Gilgit-Baltistan and Kashmir, where handmade shawls play a central role in aesthetics and identity. Across the Indus Valley, these large textiles have been historically used as a format for recording. They primarily depict scenes of surrounding landscapes, using embroidery, printing and weaving as hierarchal mediums of documentation.

The weave typically depicts the soil or geological reality of the recorded landscape, while printing becomes a language for semi-permanent aspects of life. Lastly, embroidery takes on the task of visualizing fleeting or changing aspects of the creator's life. Often, highly skilled weavers will create pattern in their weaves as a visual declaration of their environment's abundance. This practice is most famously seen in Kashmiri shawls, serving as testament to the deep reverence and connection Kashmiri people have for their land – an act of resistance in the face of ongoing occupation.

In Punjab, particularly in larger cities, this tradition of large format shawls has all but disappeared, brought by the changing modes of habitation and deskilling of handiwork. Over the course of British occupation, the size of families living under one roof shrunk, and through colonial conditioning, the "garment" became recognized as an item owned by a single individual rather than a collective. Shawls, such as the ones my grandmothers received in their marriage trousseaus, were three meters long and a gaz wide.

The cotton artifact that I made is an amalgamation of two cloths – beginning at the top with handwoven desi cotton and finishing at the bottom with machine made American cotton. Though the fabrics look very similar at face value, their reaction to cutting, sewing, dyes, and embroidery thread vary greatly. American cotton was considered an asset at the beginning of the twentieth century for its ease in dyeing and agreeability with machinery. Whereas desi cotton, due to its visible gridline weave, and particularities with paint and dye, served as a well-crafted canvas for craftwork and expression. The artifact is dyed with indigo, the iconic pigment first harvested from the indigo plant found natively on the banks of the Indus River. Despite using the same dye on both fabrics, the tonal changes and colour depth vary greatly. On top of the artifact's fabric, there are various native Punjabi motifs and elements of ornamentation appropriated from across time to serve as archive of a lost landscape. The structure of these motifs plays on both the narrative and symbolic principles of shawls and saris.

In order to learn the skills necessary to make the piece, I attended an embroidery workshop led by textile artist Rafia Shafiq focusing on phulkari and a six-week handweaving workshop held at the Kitchener Weavers and Spinners Guild. Rafia's workshop introduced the fundamental symbols of phulkari embroidery and how to make patterns within the practice's conventions. Gwen, my teacher at the guild, taught me how to prepare a loom, weave a garment, take it off the instrument and finish the piece. The artifact took me hundreds of hours to produce. What I envisioned in my mind is not what it ended up looking like, but I tried to suspend my need to control the textile in order to allow myself to learn through it. Unlike traditional South Asian textiles, it is an amalgamation of various methods, coming together in unrefined and often awkward ways. Unlike modern machine textiles, the presence of the hand is visceral. Nothing is perfect, everything is expressive. While I made the piece in Southern Ontario, the repetitive acts of stitching, weaving and embroidery aided in understanding the rhythms of daily life for my grandmothers in Lahore. These practices facilitated storytelling, knowledge sharing and socializing, creating a temporal continuity that linked generations.

The artifact began with a series of experiments comparing desi and American cotton, growing to include a comparison between hand and machine woven fabric. The experiments included dyeing, block printing and stitching by hand. Machine woven American cotton took on dye much quicker, with dip dyeing techniques expanding across the surface of the fabric easily and block print paint absorbing easily. It also tore more easily in the stitching and embroidery processes in comparison to handwoven desi cotton. With a tight grid visible to the naked eye, desi cotton was easier to stitch with precision by hand and remained more durable to ripping and tearing. These experiments in the early stages of my research work led to the understanding of South Asian textiles as a sophisticated mode of visual representation. In seeking a spatial conceptualization of the site outside of its colonial rendering, I turned to indigenous traditions of textile ornamentation where ecology stood at the forefront of storytelling. In Punjabi oral and textile traditions, the five rivers carried distinct characteristics which transcended beyond their colonially demarcated boundaries into the land and its people. The rivers themselves were recognized as divine – either godly spirits or holy water capable of elevating souls. The local epistemologies, which have largely been lost through processes of colonialism and nationalism, still persist in diminishing oral and material traditions. These epistemologies intrinsically foster climate empathy through their reverence of rivers as foundational lifelines. I wanted to engage with these forms of storytelling in hopes of representing the Punjabi landscape on indigenous terms – breaking from the largely colonial understanding of Punjab that my research is predicated on.

I began by sourcing cotton fabrics from Punjab (India), one machine woven American cotton, the other handwoven desi cotton. After performing my experiments, I referred to archival maps of the Sutlej River, available on ArcGIS by the Indian government, and began tracing two distinct forms of the river, one on each fabric. On the desi cotton I traced a satellite map from 1978, during the high tide season of August. On the American cotton I traced a similar map from August of 2023. After the initial tracing, I waxed one layer of the river at a time, and then dip dyed each fabric in natural indigo dye (sourced from Pakistan), prepared in a vat. Each fabric received four layers of wax and dye, and one cycle in the washing machine to remove any excess dye and remaining wax. This waxing process of dye resisting is known as batik. Originating from Southeast Asia, the technique became popularized in Punjab more than a thousand years ago. Once I finished the dyeing process, I noticed how much darker the American cotton was compared to the lighter blue of the desi cotton. I also noted the waxing process was more successful on the desi cotton, with dye bleeding through the wax or wax shifting on the American fabric.

After dyeing the fabrics, I outlined the vast canal network on to each, using maps from the Government of Punjab (Pakistan) and the Government of Punjab (India) available through their public domains.
With the canals outlined, I cut and stitched the two fabrics together along canal routes, with desi cotton dominating the top of the tapestry and American cotton dominating the bottom. The number of stitches and pieces increases travelling down the artifact in order to visualize the expansion of the canal network over time. The stitching of the two fabrics created a Frankenstein-like tapestry with awkward pleats and pinches throughout. Thus began the journey of ornamenting a spatial story onto this canvas, with the river as both the setting and central character. Tufting, embroidery, weaving and stitching provided various techniques to populating the artifact, with tufting being a category for large scale more permanent land-based movements, embroidery representing small scale temporal movements, and weaving denoting to division and partitioning. When I travelled to Southern Punjab, I sourced handwoven khadi from different towns, made of local cotton species. I employed these fabrics on the tapestry to illustrate the arid desert-like landscapes characteristic of the South in order to convey the variance between these regions hidden in our unassuming understanding of deserts.

The tapestry, going from top to bottom, strives to represent both a spatial and temporal story of the Sutlej. Beginning from the top, the source of the Sutlej River emerges from the glaciers found in the Himalayan mountains, weaving through the Ladakh and Pir Panjal ranges. Temporally, this is when the Indus Valley civilizations emerged during antiquity, creating Sanskrit as a written script and giving birth to Prince Siddhartha Gautama – the Buddha. Going down, you come to the foothills and lost forests of Punjab, where once tigers roamed. During antiquity, the charkha was invented and widely used to begin making cotton fabric. Various species thrived in and around the river, including the lotus flower, pink dolphin and snow trout. Further down the river, wetlands and long grasslands were habitats for pink headed ducks, gharials and local large bird species such as the Indian bustard. All of these have now been lost. Poets such as Bulleh Shah and Waris Shah contributed to creating the strong Punjabi oral tradition which included folklore such as Heer Ranjha and Sohni Mahiwal, both stories of star-crossed lovers separated by a river. Various scripts of Punjabi emerged, illustrating the diverse, pluralist nature of the region's communities. Halfway down the river, at the end of the 17th century, Sikhism spread across Punjab as a strong religious and communal practice. The Sikh Empire, established by Maharaja Ranjit Singh, built its capital on the banks of the Sutlej River in the holy walled city of Amritsar, with the Golden Temple at its heart. Less than a hundred years later, British troops began conducting military excursions into the Punjab region in hopes of expanding their colonial territory. In 1856, Punjab became the last province to fall under British occupation, culminating in the creation of British India.

Thirty years later, a canal scheme was launched in order to propagate agriculture at the heart of Punjabi land occupation and cultural identity. Canalization erased indigenous farming, critical landscapes such as forests and wetlands, and forced locals to farm in a plantation model of agriculture. After seventy years of canalization, Punjab underwent a violent division of forced migration and communal destruction in order to create the nation-states of India and Pakistan. Today, environmental degradation and spatial authoritarianism define the two divided halves of Punjab. Towards the bottom of the tapestry, a handwoven divide denotes to the Sutlej being both a framework for political border making while contrastingly being divided itself between India and Pakistan. Additionally, it represents how ecological and human destruction went hand in hand in the region's unravelling.



Figure 58. Detail of the tapestry showing the embroidered map of the walled city of Amritsar with the Golden Temple highlighted in blue and golden thread. Photograph by author.

Viewed as a narrative, the artifact seeks to tell the story of displacement and alienation in the Indus River Basin. Its base cloth is dyed to represent the Sutlej River in two different cycles, one from the early twentieth century, the other from present day. On top of the river, embroidery motifs signal how ecosystems and the built environment shaped around the river, undergoing transformation as colonial intervention unraveled. From the top it begins with a pre-colonial ideation of Punjab, working its way down to the bottom, through Partition, into the present day. The presence of desi cotton begins to decrease as the use of American cotton increases towards modern day. This symbolizes the material change of Punjab's ecological environment. Building and constructing worlds at the scale of the body has material and ideological implications which change in response to ecological and cultural shifts.



Figure 59. Bottom of the tapestry showing the hand woven divide illustrating Partition. Photograph by author.

The Partition of British India in 1947 intertwined collective trauma with nation-building, colouring the literature and cultural archives concerning any historical information with nationalist tints. Most erroneously, state-sanctioned historical scholarship around British occupation and Partition carry a "colonial amnesia" which frames the 1947 events as a celebration of freedom from colonial oppressors, whereas for the majority of the subcontinent's inhabitants, it was a catastrophe of human suffering.[7] Within this nationalized framework of postcolonial history, native epistemology is discarded, and with it, a meaningful understanding of the native life lost to colonial transformation.

Colonial devastation did not end in 1947 with the British exodus. The freshly outlined nation-states of Pakistan and India inherited and continue to further a legacy of resource extraction, ecological degradation, land theft, and violent oppression which has led to widespread political unrest and climate catastrophe. Historian Yasmin Khan asserts the central role of land division, and its physical manifestation of "the border", in both India and Pakistan's state making.[8] The imperial praxis of surveying, drawing, and sub-dividing land became the catalyst to history's largest mass migration – the forced displacement of more than 15 million native South Asians. Widespread displacement concurrent with nation-making allowed state authorities to craft nationalist identities which imposed a fundamental difference between people of the same ethnicity, community, and even family. This othering relied on the implied material and temporal permanence of a colonially crafted line. Today, hostile relations between India and Pakistan form the foundation of authoritarian domestic policies which marginalize native communities to control land, water, and other resources.

But, I think life persists beyond borders. Despite authority's aim to enclose and diminish the will of the people, human tendencies to gather, love, make, exchange, regardless of capital, are fundamental to our being. Thus they continue as we continue, and often when displacement and violence rupture a community, these tendencies become the reason we go on. When my grandfather's friend, Vikram, emigrated from Lahore to Delhi, he named his auto shop, Lahore Autos, still operating under the same name today. My great-aunt, who migrated from Lucknow to Karachi has a diary pressed with all the flowers and leaves which grew in the family home she left behind. Our old neighbour had a plaque his father told him to keep, which read "Sushant Singh Residence", denoting his old neighbour, whose front plaque he kept in case he returned. Despite the national identities of India and Pakistan holding ideological, political and cultural space across the world, I would reckon most Punjabi feel more connected to one another than to their countrymen.

7. Lines of Control: Partition as a Productive Space (London: Green Cardamom, 2012).
8. Yasmin Khan, The Great Partition: The Making of India and Pakistan (New Haven, CT: Yale University Press, 2017).

The tapestry aims to materialize this connection, this idea of Punjab, as an ever changing collective, which remains continuously connected through the persistence of the Indus River Basin. While recognizing this continuity, the artifact also seeks to capture the transformational nature of the land and community. The process of making the piece taught me how attentive and rigorous the work is, how fabric is a landscape in itself, a building material, so the needle, the loom, the dye become your tools of spatial design. As the garment moves, folds, gets dirty, gets wet, dries, it accumulates different characteristics and the landscape changes. Mending, tailoring, washing, stitching, maintaining the landscape becomes integral to the renewal and persistence of self. The act of making with what's already been made, changing and transforming an existing object, gave me insight into this cyclical yet buildable system of knowledge my grandmothers learned through. It felt comforting to know the item I had was made with care by someone and imbued me with a sense of responsibility in caring for the object and transforming it into something beautiful out of respect for their work. I imagine these sentiments ringing through Musharraf and Naushaba's fingers as they sat to make.



Figure 60. My mother's family at the Taj Mahal. 1975. Photograph by author.

Vegetation dense fertile mountains of Kashmir's Pir Panjal range

"His roar, rising from the earth up to heaven, awakens existence. With the wielder of light, he spreads infinite radiance. As the thunderbolt [strikes] from a rain-laden, falling cloud, so does the harmonizing bull, lowing urgently, hasten forth." (Rig Veda 1.32) Describing the creation of the cosmic waters (rivers)

Tufted depiction of the fertile rich forest-dense foothills of northern Punjab

A charkha, spinning wheel used to make thread, invented during antiquity

Bengal tigers roamed the forests and riverine areas of the Sutlej, but went locally extinct by the 1900s

The red stitching is done along the canal irrigation network map

The lighter blue fabric is made on handwoven desi cotton, represents the pre-colonial Sutlej River

Tufting pattern depicting long grass wetlands which began disappearing after large scale canalization

Phulkari pattern depicting the cross species pre-colonial method of farming wheat and lentils alongside each other

"Ravi: the land of people of honor, Chenab: the land of lovers, Sutlej: the land of seekers of spiritual enlightenment..." Punjabi proverb, Perso-Arabic

Great Indian Bustard – locally extinct due to destruction of long grass habitat

Tufting depiction of wetland tall grasses largely lost to the canal scheme

Pink headed duck – extinct since 1950s

Desi cotton depicting arid desert landscapes characteristic of Southern Punjab



Rocky, vegetation sparse mountains of the Tibetan Ladakh mountain range

"May the one who grants clarity, the compassionate listener, the uniter, the giver of beautiful realms—here through every river." Rig Veda, 1.25 (Sanskrit)

Siddartha Guatama (the Buddha) , the founder of Buddhism, who lived in the Indus Valley during the 6th century BCE

Phulkari embroidery piece depicting a lotus flower, now endangered in Punjab

Mahseer – snow trout, locally extiinct in the Indus River Basin

Pink dolphin shown in the river, now extinct across the Indus River Basin

The darker blue fabric is made of machine woven American cotton, representing the colonial Sutlej River

Locally extinct gharial that roamed wetlands and rivers across Punjab

"the Chenab is a hundred feet deep, do not ensure death by drowning in it." Waris Shah, *Heer Ranjha* (Perso-Arabic)

Tufting depiction of wetland tall grasses largely lost to the canal scheme

Hilsa – Indian shad, locally extinct in the region of undivided Punjab

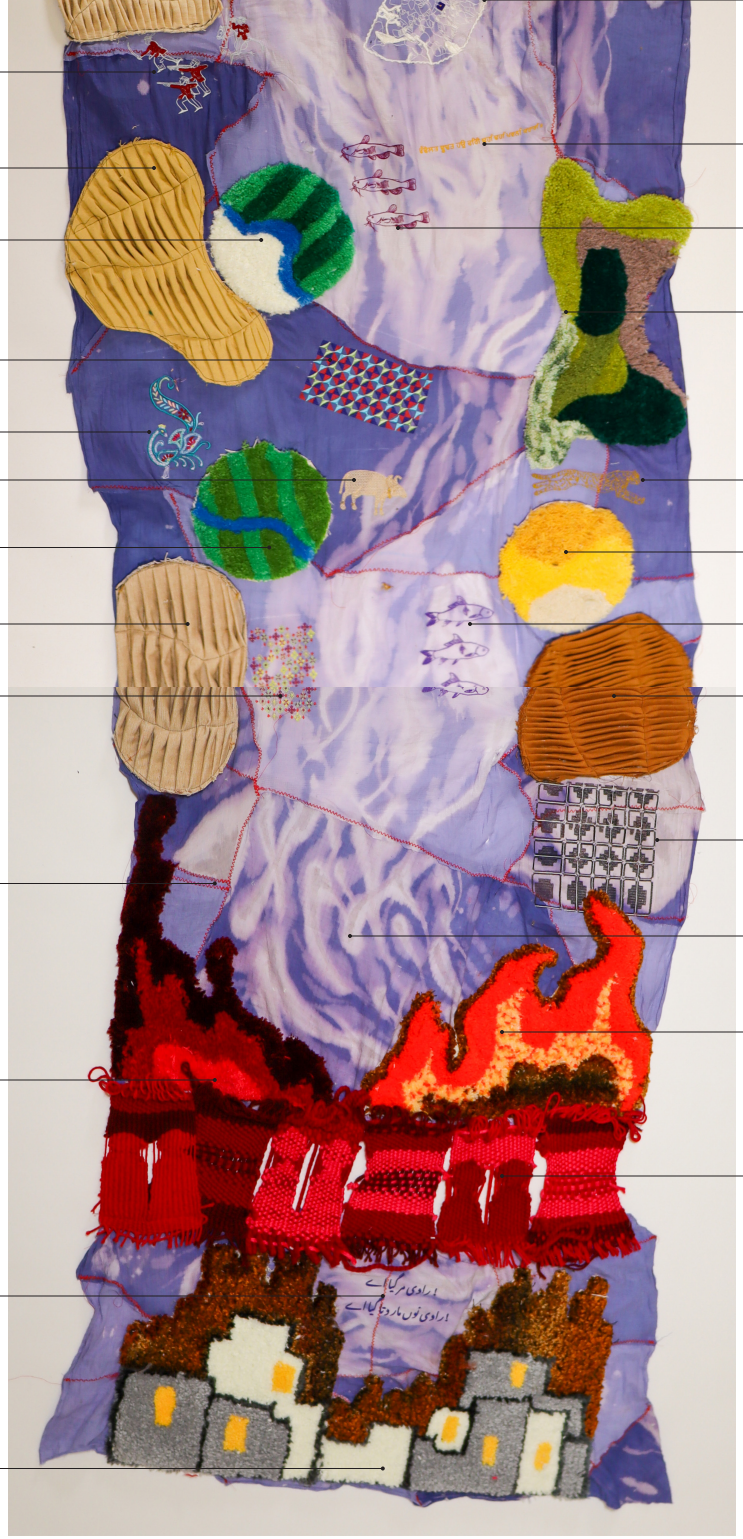
Phulkari motifs for fields of lentils, traditionally grown in low elevation wetlands

Punjabi heroine, Sohni, floating on a clay pot across the river to her lover

Clay-sand like conditions found along the southern regions of the Sutlej River

Bagh and fortress of Maharaja Ranjeet Singh, ruler of the Sikh Empire

City plan of the walled city of Amritsar,



British soldiers charging, illustrating the military conquest of Punjab in 1856

Arid desert landscapes were disrupted and exasperated due to over-irrigation

Tufting depiction of colonial land occupation, with a canal providing the framework for plantation style farming

Phulkari pattern depicting water intensive farming of lentils and rice together

Peacock – endangered bird in Punjab

Cattle grazing is how pastoral communities occupied riverbeds during low tide

Rice and maize plantation farming

Desi cotton depicting arid desert landscapes characteristic of Southern Punjab

Phulkari depiction of small single-crop farms characteristic of the 20th century

Frequency of red stitching towards the bottom denotes the rapid expansion of the canal network over 50 years

Division of fire patterns illustrates the division of the Punjabi territory, people and resources under the Partition Plan of 1947 that led to mass migration

"The Ravi is dead! The Ravi has been killed!" Abuzar Madhu, Lahore Biennale, 2024 (Punjabi)

Tufting depiction of ecologically destructive, concrete heavy construction common in the nation states of India and Pakistan, despite forced division

with the Golden Temple highlighted in blue and yellow thread

"Searching, seeking, I wander, collapsing again and again, (by) the river's command/grace." Guru Nanak (Gurmukhi)

Lahori khagga – endangered catfish

Tufting depiction of depleting forests and long grass close to the riverbanks

Asiatic cheetah went extinct in Punjab in 1952, with the last siting being 1947

Tufting depiction of wheat and cotton fields, the most common colonial crops

Rohu – native species of carp that is locally extinct in the Sutlej River

Clay-sand conditions which followed after over-farming in 19th century Punjab

Khes weave pattern representing the rigid urban planning of canal colonies

Batik dyeing pattern showing the uptick in anastomosis after canalization

Tufting design depicting the urban and ecological destruction of Partition

Torn river joined with a handwoven cloth made of red, crimson, maroon yarn including figures of people – denoting to the allegory of Punjab's rivers running red with blood due to the communal violence during Partition

Figure 61. Diagram decoding the tapestry artifact. Made by author.

Conclusion

INDIA'S KISAN PROTESTS

For the last four years, farmers unions from across India have been striking, protesting and marching towards the capital of New Delhi to resist the implementation of three new laws which would see the minimization of government regulations on the agriculture market. The first of these laws is the Farmers' Produce Trade and Commerce (Promotion and Facilitation) Bill, which allows the trade of farmed goods to expand from select areas to "any place of production, collection and/or aggregation" in addition to allowing e-commerce purchase and trade of scheduled produce. It also prohibits state governments from imposing any regulation, fee, levy or market minimum on sales occurring outside of the "trade area". The second bill, Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Act, removes the role of state and federal regulatory boards in the market, and provides a framework for contract farming between a farmer and buyer preceding the production or harvesting of any agricultural produce. The final bill is the Essential Commodities (Amendment) Act which removes minimum pricing from crops, but allows the government to implement them on essential crops in extreme cases such as war or famine. The bill requires all pricing for crops such as wheat, cotton, sugarcane and rice to be based on market value.

These reforms were made in hopes of encouraging growth in India's economy by creating opportunities for the private sector and attracting foreign investment to India's agricultural industry, which is the largest contributor to the nation's economy. However, unions feel these laws remove an already lacking safety net for Indian farmers which will make them vulnerable to large corporations and eliminate impactful measures such as the Agricultural Produce Market Committee (APMC), a third-party committee elected by national farmers unions which regulates spaces of agricultural trade and sale, known as mandis. Additionally, there is mounting fear that taking away a state's right to trade and purchase essential crops will result in famine as the majority of produce will be sold to foreign corporations, leaving either little produce in the country, or the produce sold within the country, will be at inflated rates many won't be able to afford.

In September of 2020, farmers' unions from across India went on strike to protest the enactment of these bills, marking the largest organized labour strike in human history. Over 250 million union workers, across multiple sectors, participated in the strike in support of farmers' demands to have the bills repealed. Transport unions such as the All India Motor Transport Congress (AIMTC) which represents 9.5 million truck drivers, 5 million bus operators, and 10 million taxi drivers, halted their movement of goods and people in Northern India in solidarity with farmers' unions – threatening to halt their operations nationally if farmers' demands were not addressed by the government. The following month, hundreds of thousands of farmers' began marching towards the national capital of New Delhi after a lack of response from the federal and state governments to union demands.

The majority of these farmers came from the provinces of Punjab and Haryana, where more than 75% of the population's livelihood depends directly on agriculture.

In 1966, the Indian government carved out the states of Punjab, Haryana and Himachal Pardesh from what was previously known as East Punjab. While officially this was done on grounds of linguistic difference, many believe this move came as a response to the rising Sikh separatist movement of Khalistan, which called for undivided Punjab to be its own nation and criticized the division of the traditional territory in the 1947 Partition of British India. After the division of East Punjab, the states of Punjab and Haryana were used as testing grounds for India's Green Revolution, a development plan issued by the Indian government which sought to modernize India's agricultural systems through extensive mechanization in order to fully capitalize upon land, labour and product. This development plan included incentivizing farmers to buy tractors, promoting pesticide use, experiment with high-yielding foreign crop variants and the installation of electric water pumps to aid irrigation. Within a few years, Punjab and Haryana began to increase their grain and cotton production through the development of high-yielding wheat and cotton strains, and the successful use of pesticides. However, by the late 1980s, Punjabi farmers, particularly those growing cotton, were plunged into poverty and debt.

In the 1980s, BT Cotton, a mutation of American cotton, was developed in India as an effort to modernize and industrialize India's cotton production. The American agrochemical company, Monsanto, was awarded more than a billion dollar, multi-decade contract by the Indian government to develop a high-yield cotton variant and the required herbicides and pesticides needed for its success.[A] The mutation was grown in experimental trials throughout India with promising results despite the need for extensive irrigation. Shortly after, Monsanto patented the variant and sold it to Pakistan for large scale cultivation. Within a few years, BT cotton replaced virtually 95% of all cotton variants grown in both India and Pakistan.

A. Monsanto developed similar high-yielding, pesticide heavy cotton variants in parts of Africa such as Burkina Faso.

Due to the widespread use of the BT cotton variant, the lack of biodiversity in India's cotton escalated pest problems and necessitated the use of pesticides. Many farmers could not afford Monsanto's market-rate pesticides and began using black market un-regulated pesticides which were less effective and carried harmful toxins. In fact, even the pesticides Monsanto was selling carried toxins which were banned in the United States and Europe due to their harmful effects on humans and animals. Widespread pesticide use caused an increase in cancer and decrease of fertility amongst agricultural workers.

At the turn of the millennia, as droughts and floods became more frequent in Punjab, the unprecedented humidity gave new life to the American bollworm pest, slowly rendering pesticides less and less effective. Bollworm began taking more than half the season's yield, despite heavy use of pesticides. An article written in the St. Louis Post Dispatch from Sunday, Novem-

ber 22, 1998 by Bill Lambrecht titled "India gives Monsanto an unstable lab for genetics farming" tells the story of a farmer from Andhra Pradesh named Shankar:

> *At noon of Feb. 23, farmer Damera Shankar walked the red dirt road from his village to check his two-acre plot. He returned at 1:30, mixed a cocktail of insecticides and drank. By 5:30, he was dead.*
>
> *For an hour, Shankar had watch a voracious green caterpillar called the American bollworm devour his cotton and vegetable crops. At age 23, he owed $17,000 – a fortune in India – for pesticides that had stopped working.*
>
> *Seeing the ruin of his crops that day, Shankar worried that his family would go hungry, his ailing father surmised. "Until then, he has kept confidence. But when he saw his field, he knew he had lost control," the father, Ileakomru, recalled last week.*
>
> *The young man's demise may seem freakish, but its not unique. The suicide is one of nearly 500 in the central Indian state of Andhra Pradesh since October 1997.*

Today, cotton cultivation in India and Pakistan is arduous. As the climate changes, growing seasons are being delayed every year, but market sales occur routinely in the fall, forcing farmers to use high amounts of electricity in order to irrigate their land to grow enough product to sell competitively. While cotton remains one of the most highly-valued crops in both countries, with the central governments pushing for an increase in production every year, the risk in growing cotton is insurmountable and its cultivation drains the land of its nutrients.

Heavy irrigation often leads to parasitic bacteria developing in the soil, which makes growing indigenous produce – which is suited to dry, well-drained soil – such as fruits and vegetables nearly impossible. Without regular crop rotation in addition to heavy pesticide use, the tested quality of soil has severely diminished across cotton growing districts in India and Pakistan, while the toxic content of ground water has increased. Increased toxins in water not only corrupts the soil, but has been shown to adversely impact the health of livestock, local ecology's flora and fauna, and the general community.

Additionally, due to increased flooding and lack of genetic biodiversity, bollworm can take up to 75% of the season's yield. Some farmers spend up to half their income on buying pesticides in order to preserve their yield. However, without a minimum price for cotton on the market – due to the Essential Commodities (Amendment) Act – large corporations can and have lowered the price of cotton to the point where many farmers are unable to afford to pay their workers, feed their families, buy seeds for the next season or pay their loans.

This dire situation has resulted in the suicide of close to 500,000 Indian farmers in the last 30 years. The majority of these farmers are small and marginal growers, farming for subsistence, with an alarming concentration of these deaths taking place in the cotton belt of Malwa. Although many large landowning farmers benefited and continue to benefit from the Green Revolution's reforms – such as institutional credit, short and long term loans to support machinery costs, and high-yield seed incentives – modernizing agricultural practices which are often ecologically and economically challenging, along with the redistribution and subdivision of land, have continuously disrupted people in Punjab, in many cases leading them into violent conflicts and displacement.

In cases of suicide caused by acute indebtedness, many farmers turn to selling their land in order to relieve their debt, however, cotton farmers find the value of their land has severely diminished on the real estate market due to environmental degradation from the use of pesticides and heavy irrigation. Due to the societal importance placed on land ownership, *zamindar,* or property knowing farmers, don't take labour jobs on other farms because of the lower-caste association with non-landowning labour, *mazdoor.*

The *mazdoor* in Pakistan regularly die from heat wave, flooding and intense pollution. These symptoms of climate change impact the landless labour class the most as they have little to no laws establishing their labour rights and often live in poorly serviced neighbourhoods on vulnerable land. In Lahore, many *mazdoor* live along the riverside, where the efforts of water gangs prevent necessary development such as plumbing, water, or electricity lines from being built. A lack of water and electricity impacts the hygiene and livelihoods of these neighbourhoods' residents, limiting what schools accept their children as pupils or what workplaces will hire them. As the Indus River Basin grows increasingly more volatile in cycles of seasonal flooding, Lahore's riverside communities face the most destruction. In 2022, millions of people living on vulnerable land were displaced across Pakistan due to widespread flooding. Historians and scientists alike point to the British built canal network as a major catalyst in worsening flood conditions with evidence showing canals disrupting the flow of water, bringing water into neighbourhoods, and further polluting flood water due to long term waste collection. After 1947, both nations exponentially expanded the canal networks on either side of the border, deploying infrastructural strategies to control each other's water flow and undermine one another's irrigation systems. With subpar mapping and documentation, around 37% of the canals in Pakistan are abandoned – more specifically, are not maintained, are blocked up with debris, and don't serve any aquifers. Despite not productively contributing to an agricultural irrigation scheme these abandoned canals still operate as agents of flooding by bringing water where it shouldn't and doesn't need to be while further polluting it.

While the citizens of Pakistan face catastrophic symptoms of climate change and grow increasingly climate conscious, the government stays committed to aggressively extractive and ecologically destructive policy. The political party currently in power has a longstanding history of authoritarianism, kleptocracy and religious extremism, with the man who has served as its head for more than forty years being a notorious Punjabi mill owner known for violent union busting activity.

I visited Lahore this October with my family. It was my father's first time back to his hometown in fifteen years. He commented on how he scarcely recognized the city. Despite spending the majority of his life in Lahore, the city had expanded and changed so much he was barely able to discern neighbourhoods or major intersections. The urban sprawl had grown – with the majority of Lahore's rural outskirts replaced with gated communities. On a national scale, numerous highways and roads were being routinely shut down by the military in efforts to stop public protests. Internet signals were constantly being cut with features such as email or text attachments banned for days on end. In the north, the town of Skardu nestled amongst the Himalayan mountains, had become the site of a showdown between the Pakistani military and local Balti tribes.

Skardu's main highway, which serves as a trade route to China and a service artery for the local military base, was blocked by protestors defiant of the army. The persisting tension between the two parties are land rights to the Indus Valley. Local tribes assert the valley belongs to them as their ancestors have inhabited the land for countless generations, whereas the military demands ownership to build an air base for the purpose of "national security."

Mr. Hussain, a weaver and shopkeeper I spoke to, told us how he used to travel to Kashmir in the summers to learn traditional hand weaving, however, the army's growing aggression has him staying home in fear. In southern Punjab, specifically Multan, the changing climate and degrading soil is shrinking the annual harvest. Where farmland decreases in real estate value, vulturous developers are seizing tracts of land to develop gated communities. The largest of these developers is the Defence Housing Authority (DHA) a real estate investment trust owned and operated by the Pakistani army. In Multan the DHA seized roughly five thousand acres of land and developed residential neighbourhoods and a golf course. This development scheme singlehandedly cleared the last remaining orchards of *chaunsa* mangoes the region is famously known for. To acquire this land, the DHA enacted the Land Acquisition Act written into law by British administration in 1887, allowing them to buy out the previous inhabitants at criminally low rates.

While fruit farms are being destroyed, cotton fields are burning in the summer heat. Researchers at the Central Cotton Committee of Pakistan (CCCP) took us on a tour of their facilities, where no government funding for the last three years has them selectively turning on lights in rooms and reprinting on recycled paper. The issue researchers are facing is the progressively failing harvests of Pakistani cotton farmers, changing climate and pressure from agrochemical and seed corporations to release a heat resistant cotton variant. To tackle the inhospitable circumstances created by a changing climate, researchers have begun cross breeding BT cotton with indigenous variants such as *gossypium arboreum* found across the country. Since all the cotton in Pakistan is picked by hand, primarily by women, there's no need to trim the plant, allowing for local cotton plants to grow more abundant with bolls compared to crops in China or the United States. The genetically-engineered cotton plant requires less water and pesticides while being more resistant to heat and bollworm, however, the multi-seasonal growing cycles has prospective buyers hesitant to put the seed on the market. Dr. Muhammad Naveed Afzal, the director of the CCCP, expressed his grim outlook on Punjab's cotton cultivation in the coming years. With a much wetter monsoon and terribly hot summers, he believes the climate coupled with the region's highly-degraded soil makes today's Punjabi cotton severely inferior to the cotton he grew up seeing in the fields. In his opinion, and the opinion of his colleagues, the finest cotton grown in Pakistan today is grown in Balochistan.

For the past 76 years, native Balochis have resisted Pakistani occupation in their efforts to gain autonomy over their ancestral lands and resources. Last month, members of the Balochistan Liberation Army (BLA) killed twenty three passengers traveling by bus, van, and truck on a highway con-

necting the provinces of Balochistan and Punjab. After stopping twenty two vehicles and checking passengers' National Identity Cards, those identified as being from Punjab were shot. Similar attacks over the past ten years have resulted in the deaths of over fifty Punjabis and nearly a hundred military personnel. In retaliation, the predominantly Punjabi Pakistani army has carried out mass executions of imprisoned Balochis labeled as "local militants" or "terrorists." Since the early 2000s, around twenty thousand Balochi activists, students, and civil society members have disappeared, with evidence pointing to military abductions and state-sanctioned violence.[B]

Now, with an American-financed military deepening their control over the region concurrent with the agricultural degradation of land in other Pakistani provinces, Balochistan is being subjected to irrigation schemes and agricultural settlements similar to those deployed by British administration in Punjab during the 1880s. In north Balochistan, on hundred of tonnes of soil mixed and transported from the Himalayan mountains, army-financed agricultural corporations are growing some of the world's highest quality of American cotton on stolen land and silenced lives.

What began in the eighteenth century, with the East India Trading Company establishing property on the coast of Bengal, continues today through the nation states of India and Pakistan.

In ancient times, the Indus River was referred by the Indus Valley civilizations to the east and the Persian Empire to the west as **"the border"**. As these civilizations expanded, the river's name iterated: *Sindhu* in Sanskrit and *Hindu* in Persian became *Indos* in Greek and later *Indus* in Latin, giving rise to the name "India" for the South Asian subcontinent. The linguistic translation and perseverance of the Latin moniker highlights the significance the Indus River had and continues to have in regard to not only creating life for people living on the subcontinent, but in formulating a global understanding of South Asia and its value, rooted in resources. The persistent European drive to access the subcontinent's resources has led to the colonial occupation and genocide of millions across the world, memorialized through the naming of indigenous American communities as "Indians" by settlers, in addition to the labels "East Indies" and "West Indies" given to the land by settlers of Southeast Asia and the Caribbean islands. From antiquity, South Asia has been at the heart of European colonial maps of plundering and domination.

This extractive perspective is deeply embedded in the global and domestic narrative of South Asia. By way of privileging resource cultivation and exploitation for several centuries, the subcontinent's ecologies, landscapes, and communities continue to degrade at an alarming rate. The colonial praxis of organization and extraction reveals a tapestry of intentional destruction—an enduring crime against native life. Yet, in tracing these colonial transgressions, we uncover remnants of resistance. Landscapes transformed under occupation become sites of resistance for native communities in response to colonial ruin.[C]

B. Balochi resistance dates back to 1948, when the region was annexed by the newly formed state of Pakistan. After the Partition of British India, Pakistan sought to strengthen itself through military development and resource extraction. With one of Asia's largest natural gas deposits, along with abundant gold, iron, marble, coal, and a strategic coastline along the Arabian Sea, Balochistan became a resource asset Pakistan was desperate to control.

C. In 2023, Bangladeshi researcher's used samples of muslin from the Victoria and Albert Museum to revive the previously extinct cotton species of *gossypium arboreum var. neglecta,* the plant from which the famous Dhaka muslin was woven.

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