

ECO-SOMATIC EDUCATIONAL JOURNEY: PHYSICAL,
EMOTIONAL AND PLANETARY LIVES OF MY BODY

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Abstract

This study offers itself as an educational journey oriented by ecosomatics and earth democracy. It deepens these ways of knowing by locating them in ways of sensing, feeling, relating, being and living in a brown woman's somatic body, experiencing her physical, emotional, and earthly entanglements, participating in the alive-ness of her earth family. Through the educational journey, this study carves possibilities and openings of a somatically textured environmental education by revolving around the question of what it means to do this work with the body in relationship with the planet, in this time and place. Bodywork in this study takes the form of exploring the researcher's three bodily processes of digesting, breathing and menstrual bleeding framed through the physical, emotional, and planetary lives of the gut, breath, and menstrual blood. These explorations shed light on the various physiological and ancestral somatic entanglements, the enmeshed medicines of various emotions and the intertwined planetary kin relationships held within the gut, breath and menstrual blood. This study finds that all of these corporeal entanglements make and shape the living ways of digestion, breathing and bleeding which throb, simmer, swirl and flow in a somatic web of relationships.

Keywords: somatics, ecosomatics, earth democracy, environmental education, entanglements

*For my father, who taught me how to be a lifelong student
of awe, curiosity, and wonder.*

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Invocation

Many sacred rituals or prayers in India start from an invocation. The Sriyantra (shown below) is my version of an invocation that guides and inspires this thesis. A Srichakra or Sriyantra is considered to be the highest embodiment of integration, union, harmony and balance in Indian cosmology. It is a deeply mystical symbol from vedic traditions from thousands of years ago, that signifies the fullness of different types and layers of integrations in life.



Figure 1: Srichakra (Pranavananda, 2020)

As highlighted by Kak (2010), Srichakra symbolises the union of body, mind and spirit. It also implies the integration of Shakti (cosmic feminine life force), Purush (consciousness) and Prakriti (nature). It signifies the union of Shrishthi (universe), Stithi (preservation) and Laya (destruction). It also symbolises the harmony of past, present and future. It exemplifies the integration of Atma (individual self), Antaratma (inner self) and Paramatma (supreme self). Sriyantra epitomises the

harmony of all the seven chakras of our human body as well as the union of the five elements of nature (earth, water, fire, air and ether). It also embodies the oneness and non-duality of microcosm and macrocosm, outside and inside, outer and inner. For me, this Sriyantra represents the fullness and richness of the whole web of life. All the various areas of integration and harmony of life are reflected in different parts of this Sriyantra. It reflects sacred, magical, geometrical, cosmic and divine harmony.

I begin this research by honouring this spirit of integration embodied by the Sriyantra. I begin by offering gratitude to ancient ancestral ways of knowing which have tangibly and intangibly found their way into my life and into this work. I begin by praying for guidance through this work, which lives in this document and is simultaneously located much beyond this document.

This research is an ode to integration.

It is an ode to harmony.

It is an ode to the body.

It is an ode to feelings, corporeality, sensations and awareness.

It is an ode to the planet.

It is an ode to relationships, to relational entanglements.

It is an ode to the beautiful web of life.

This work integrates the physical, emotional and planetary life of my body. Among the many kinds of integrations that the Sriyantra embodies, I locate the integration that I wanted to explore as an environmental educator in the physical, emotional and planetary life of my body. This was the harmony needed within me and outside me, in this time and place, here and now.

And before diving deeper into the physical, emotional and planetary life of my body, it is important to honour the collective that made this body and my being possible. I honour this collective through a positionality statement. I acknowledge my responsibility to this collective, in research and in life.

Positionality

I am an able-bodied, queer, cis-gendered, woman of colour and a first-generation South Asian immigrant from India. I am a daughter, a sister, a cousin, a niece, an aunt, a writer, a facilitator, a cook, a plant-mom, a dancer, and a yoga practitioner. My class and caste privileges are layered in

an urban middle class Indian family from Vaishnav and Kshatriya caste lineages. I am shaped by the human and the more-than-human collective of my ancestors (dead and alive), the land, the mountains, the rivers, the trees, the birds, the herbs, and the cats that have been present in different stages of my life.

I was born in Ahmedabad, Gujarat in India and have lived most of my life there. I have a younger brother. I can speak Hindi and English while understanding Gujarati and a little bit of Punjabi. As a child of a working mother and father, I spent a lot of my time in Ahmedabad with Nana-Nani (maternal grandparents) and Mama-Mami (maternal uncle and aunt). Their love and care have shaped me in ways words won't let me fully articulate. Similarly, my chachu-chachi (paternal aunt and uncle) and cousin from Delhi have showered me with love and support that has shaped me in numerous tangible and intangible ways.

Being born and brought up in Ahmedabad, it is impossible to not feel the pull of the Sabarmati river, known famously for the ashram that Gandhi built on her riverbanks. She originates in the expansive Aravalli Mountain range in Rajasthan, which I have visited often as a child, and flows westwards towards the Arabian Sea through Gujarat. This river has held a very special place in my heart, mind, and body. I have spent hours listening and talking to this river. She is also the river that carries the ashes of my dead father.

Another special more-than-human being that has shaped me in ways I don't think I have truly fathomed yet is the Narmada River. She is one of the longest west flowing rivers in India and has been in the background of most lives in the city of Ahmedabad without people explicitly honouring her as such. Narmada, in Hindu mythology, is considered even holier than Ganga because it is said that while one must take a dip in Ganga to be purified of one's sins, when it comes to Narmada, one is purified of one's sins by just looking at her.

Other more-than-human beings I honour are the Amaltas tree (*Cassia fistula*) that grew in my garden back home, that brought me much joy and many lessons over decades of my life there. She was my father's favourite tree. She also died when my father died. They were connected in their life forces. I will never forget how her bright yellow flowers and fruits filled the street leading to my house.

There is also the very special Neem tree (*Azadirachta Indica*) that I have grown up with since 2006. She was right outside my room's window. I would wake up to the sound of birds that she held on

her branches and fall asleep to the rustling of her leaves in the night breeze. I also want to honour Shamsher, one of the many outdoor cats that graced my house often, right before I left India and has taught me multiple lessons on how to hold and respect boundaries.

My Mother was born in Jhajhar, Haryana in India. She has lived most of her life in Ahmedabad, Gujarat since her parents relocated there. She grew up with one younger brother, her mother and father. She is currently a librarian at Physical Research Laboratory. This side of my family speaks Gujarati, Punjabi, Hindi, and English. My Nana and Nani (mother's parents) came from Lyallpur and Rampur in Post-Partition Pakistan. They have passed away into the next realm now. The violence and trauma of the partition continues in the blood of this ancestry like an undercurrent flowing through our lives- invisible and tangible at the same. My Nana (maternal grandfather) saw death and violence first hand, in the tumultuous and traumatic journey from Pakistan to India. He was very young when his family was forced to leave everything they cared for- their home and their home-land. The stories of that time that he used to share with us still give us the chills. My Nani (maternal grandmother) was younger when she moved with her family and experienced a relatively safer journey to the refugee camps in Old Delhi. Her family was rehabilitated from the camps to housing for refugees in Kalkaji, a neighbourhood that still exists in Delhi and has evolved with layers of refugee histories. Nani's brothers and sisters still live in that house which has now been renovated. I have fond memories of spending my vacations there when my Nani's father, Bauji, my great-grandfather, was still alive.

My father was born in Chittoor, Andhra Pradesh in India. He spent most of his childhood in Bengaluru, Karnataka. He moved to Ahmedabad, Gujarat for his first job at British Library as a library assistant. That's where he met my mother who was also a library assistant back then. That's where they fell in love. It is strange to sit with the fact that their story of love would have been impossible without this space and without the forces that shaped the colonisation of my country. British Libraries existed (continue to exist) in many cities in India and tragically became one of the very few well-maintained public libraries in the country.

My father's parents came from Chittoor in Andhra Pradesh, India and had three children: My father, Chachu (elder brother), and Attha (younger sister). This side of my family speaks Telugu, Kannada, Hindi, English, and a little Tamil. My Tatha (paternal grandfather) came from a family of orange traders and was known as "Kittalkayi" (traders of orange) from Chittoor, Telangana. His grandparents had to relocate to Bengaluru, Karnataka in the hopes of a better life as rice

traders, in a place called “Akkipet” (“Akki” means rice and “pet” means place). Tatha’s father was a Carnatic Singer. Tatha created his own path and continued his education to become the first person in his family to get a PhD (in economics). This side of my ancestry also simultaneously holds the violence of land ownership as my Tatha’s cousins were “Zamindars”. They held land in the sugar belt. This Zamindari (landholding) system existed since the time of the Mughal rule in India. It evolved into a more brutal reality when the Britishers colonised the country. They manipulated and used the zamindari system to control people. As a kid, I remember reading how zamindars, with the British Raj behind them, were responsible for collecting brutal taxes on the land from the residents of that land. As an adult, I now understand that my Tatha’s ancestors were implicated in the violence of the British rule in India.

My Dadi (paternal grandmother) came from ancestors at Mulbagal, near Punnur, Andhra Pradesh. They were farmers. They grew tomatoes, mangoes, tamarind and took care of the cattle which was another source of income. I have memories of visiting my Dadi’s village when I was nine years old. It was a new feeling back then to experience that sense of sprawling and open farmland for the first time. It was also the first time I ever caressed a calf of a cow. I distinctly remember the intersection of the intensely urban concrete landscape of my childhood with my Dadi’s openly green landscape. She lived on that farm and that land (before she got married), breathed on that land, was nourished by that land and its beings, both human and more-than-human.

These are the layers of complex histories I carry with me and inside me, in my body, my blood, my food and my breath. As I write this, I am sitting with all my relations: my brother, mother, father, nana, nani, tatha, dadi, mama, mami, chachu, chachi, cousin and all the generations of the ancestors that came before them and will come after them, after us. I am sitting with all the beings on the land, under the land and above the land – in Chittoor, in Rampur, in Lailpur, in Ahmedabad, in Bengaluru, in Kalkaji. The whole of this collective has made my life possible. I honour this collective here.

It is these ancestries, these lands and waters that converse with the ancestries, lands, and waters of turtle island. These are the human and more-than-human relationalities that I bring to turtle island, as a settler. This land is the land of the Wendat, Anishinaabe, Mississaugas of the Credit, and the Haudenosaunee. This is their land. This is where they walked, ate, sang, dreamt, breathed, held ceremonies and grew their plant medicines. They are still here and continue to do so. I honour that the human and more-than-human lineages on this land are guided by the wisdom of the dish

with one spoon two-row wampum covenant signed between the Haudenosaunee and Anishinaabe nations. One of the many translations for the Kanien'kehakeh place name for Toronto is T'karonto which means the place "where the trees stand in the water" (Taiaiaiko'n Historical Preservation Society, 2011).

I am implicated in the colonial oppression of these lands and these people even though I have experience of colonialism in my lineages from India and Pakistan. This experience of colonialism as a brown woman doesn't make me immune to the complicity in the colonisation of turtle island as a settler (Marya & Patel, 2021). I am a "settler on colonial lands from ancestral lands that have also been colonised" (Marya & Patel, 2021, p. 344). This awareness shapes my research, as a settler in T'karonto.

As a settler on turtle island, a significant question that I have been sitting with, is articulated succinctly by Raj Patel about a settler navigating their relationship with the land as "someone who doesn't intend to colonise or gentrify or obliterate a history but does so anyway" (Marya & Patel, 2021, p.337). The articulation of this question itself is so cathartic and significant because it weaves all the promiscuous tensions of being a brown settler. He goes onto remember what Kandace Vellejo told him. He notes that Kandace was someone who didn't necessarily connect to the identity of being indigenous because of disconnected ties, but whose ancestors came from Texas "before Texas was Texas". Kandace told him:

"I believe wherever we go, the earth is our home. I recognise that that is a dangerous statement in this stage of late-stage capitalist colonisation, because it can be misinterpreted. But on my travels, I pack a little altar prayer kit. Whenever I arrive, I burn some of the medicines that I carry with me. I recognise the four directions because wherever I am at, the four directions are also there. I honour and offer gratitude to the caretakers of that land and to the people whose land I am on, whether or not I know their names, and I ask for their blessing and their permission and commit to being a respectful person, like I am walking on your land. And I do my best to uphold those laws. That's not something that only people of indigenous descent can do" (Marya & Patel, 2021, p.339).

Since I have read this, and sat with this, I have integrated this into my life like a ritual, guiding the ways I walk and breathe on all lands, as a settler, as an immigrant, as a visitor, as a guest. This is how I carry my lineages and ancestries, both human and more-than-human, wherever I go. This is how I embrace being in diaspora which Rupa Marya says is equivalent to being "in a state of becoming,

to hold many possible futures, it is a state of being in a relationship, simultaneously to the ancestors of this land and to my own ancestors - the past, present and future, the way seeds are” (Marya & Patel, 2021, p. 340).

Being in diaspora is being like a seed. It is being in this state of promiscuous possibilities, being a seed, entangled with the lands and ancestors of Ahmedabad, Chittoor, Rampur, T’karonto, Lailpur, Bengaluru and Kalkaji that I bring to this research and the chapters that follow.

Chapter One: Introduction

One of the striking things about responses to ecological and social injustices is that they often share common assumptions that causes of these injustices are in the external world, and as a result focus is placed solely on monitoring and changing the external. Few have looked within, towards the body in order to better understand and respond to planetary collapse. Walla (2010) is in many ways an exception. She writes that the defining feature of the Anthropocene is disconnection and/or disassociation at various interconnected levels from the personal body to the planetary body. According to her, because of this disconnection, modern humans are scattered and dispersed from their own bodies and skin. She describes this as a diasporic condition in its own sense, just like a diaspora emanating from a place. This diasporic gap is amplified today, in a world of covid, a world of multiple genocides unfolding in real time, a world that is inflamed, collapsing, and imploding under systemic colonial violence and the interconnected climate crisis. This study locates a response to this world, to colonial abstract disembodied rationalities that “separate”, “disconnect” and “fragment”.

‘Making home’ of this earth is part of the work of ‘making home’ of our bodies, (Walla, 2010). To this, I also add, the work of ‘making home’ of our emotions. This research swims in the wombs of these acts of making home, in healing this diasporic condition of the body and the earth to reclaim, integrate, open, and resist the colonial abstract disembodied rationalities.

This study offers an exploration into the physical, emotional, and planetary life of the researcher’s somatic body through an autoethnographic study. This autoethnography is framed as a somatic study of the self in relationship with the world, with creative energies drawn from the methods of psychodrama and body mapping. This study offers itself as an educational journey drawing literature from ecosomatics, earth democracy and land-based education to carve openings of a somatically textured environmental education. I make the bold move of shifting the narrative from ways of knowing in a disembodied mind to ways of sensing, feeling, relating and living in a somatic body which is alive, entangled, related and promiscuously intertwined in the various physical, emotional and planetary processes around and within her. Through the educational journey, this study carves openings of a somatically textured environmental education by offering reflections to the question of what it means to do this somatic work with the body in relationship with the planet, in this time and place.

Bodywork in this study takes the form of exploring the researcher's three bodily processes of digesting, breathing and menstrual bleeding framed through the physical, emotional, and planetary lives of the gut, breath, and menstrual blood. These explorations shed light on the various physiological and ancestral somatic entanglements, the enmeshed medicines of various emotions and the intertwined planetary kin relationships held within the gut, breath and menstrual blood.

These processes and parts of my body offer different ways of being with my body. These are the ways of healing, integrating, listening, mending, restoring, opening, and caressing. These are the ways of living gut, ways of living breath and ways of living blood. The researcher felt that rooting deeper into these parts and processes offered more interesting and fascinating ways of relating, knowing, living and being in a body, for cracking open more somatically liberated ecological worlds. These specific parts and processes were chosen because they held the most complex and nuanced relationships within my body and outside my body.

Having discussed what this study is, the section that follows sheds further light on the place from which this study approaches the body.

Somatic Body

This study roots the "body" from the place of "soma" which Bauer (2008) describes as the inner experience of the body. It is the "somatic body" that this research locates itself on, in and with. Bodies have an inner life or an inner ecology in the ways that they engage with emotions and feelings. Bodies also have an outer life or outer ecology in the ways that they engage in relationships with the planet. This work weaves together these three realms: emotional realm of my life (inner ecology), the physical realm of my body, and the planetary realm of my relationships with the land and its beings. The centre is the body (physical), woven together with the journey inside (emotional) and the journey outside (planetary).

This study opens up a body that is sensory, vulnerable, somatic, emotional, reciprocal, promiscuous, entangled, unbounded, relational, and permeable. It resists common notions of what a good body is like, notions that often assume a non-racialised body, a thin body, a body free from illness/impairment, a body that is independent and self-sufficient, and body that is human-centric at the cost of denying all the other more-than-human entanglements. This body dwells in the vulnerabilities, in weakness, in the in-betweens, in the ocean of constant change and emergence, in resilience, in sensations, in awareness. This study frames the somatic body as subjective,

personal, wholistic, and relational and shifts the narrative away from an objective, linear, reductionist and atomistic body.

Furthermore, this research calls forth the body as a living being who is not healed from ‘problem solving’ or ‘fixing’ or a ‘workout’. This study recognises that the body doesn’t stand outside of modernity – corporeal impairment and vulnerability are part of what it presently means to be human in a body that is constantly changing. A healthy body is a body with aches, tensions, cracks, edges and in-between spaces and experiences. To make home of a body, interdependency is unquestionable, and so are relationships and kinships with others (human and more-than-human). I situate these conversations in the specific experience of my gut, breath and menstrual blood.

This study, in exploring entanglements between the physical and planetary body is shaped by Marya & Patel's (2021) work which highlights how the inflammation in our bodies, reflected in increasing diseases, is connected to the inflammation in the earth-body, reflected in the increasing forest fires, rising sea levels and worsening pollution levels. What our bodies are experiencing right now, in terms of the heaviness and diseases, are not disproportionate physical reactions but completely reasonable and necessary responses to a “pathological world” and an exploited planet we inhabit. They echo the awareness that we cannot heal if the planet doesn’t.

This research, in exploring the entanglements between the emotional body and planetary body is informed by the work of medicine guides which have affirmed repeatedly that the systemic colonial reality that exists outside us, is reflected within us too, in different forms of trauma and emotional responses passed down inter-generationally (Callaghan, 2020; Maté, 2022; Mullan-Gonzalez, 2012). These emotional realities are complex and nuanced. The way they manifest in the body is different for every person. For the researcher, these trauma responses have taken various forms – disassociation, freeze response, enmeshment, co-dependencies, cycles of guilt and shame, repressed anger etc.

It is important to note that this research views the physical body, emotional body and planetary body as not merely connected but rather as one living, extended, inseparable, intertwined membrane. They all form one permeable membrane of physical body-emotional body-earth body through all the different ways they are entangled in, with, on and around each other.

Furthermore, the foundational entanglement among all these relationships is echoed by generations of indigenous scholars, knowledge keepers, earth-workers, one of whom is Sams (1994). In the indigenous teachings on thirteen clan mothers, she writes that the idea of “right relationship” that we often hear in indigenous worldviews is about the right relations on this planet as well as the right relations with oneself. One is incomplete without the other. The fragmentation in these relationships is what gives rise to Walla's (2010) diasporic condition involving the disconnection from the body (physical and emotional) as well as place (planetary).

Therefore, while this study dives deeper into the ways in which the somatic, emotional, and planetary realities reflect each other through their fluidity, permeability, and enmeshment, it is crucial to acknowledge, honour and celebrate that this understanding is not new. It has been embodied in various indigenous and earth-based cultures for thousands of years. Their traditions of wholeness, integration and healing have withstood and adapted to myriad ongoing cycles of colonial assault and trauma. This research is shaped by and stands on their legacies, on ancestral wisdom, intergenerational medicine, resistance, and community.

Layers and Tensions in the Research

There are a few layers to this study that clarify this work further and there are a few tensions in this research that stay irreconcilable. The layers pertain to why this is a somatic journey, why this study focusses solely on the researcher's body, why this work is educational, why this research takes a specific voice in its writing and how this study relocates the academic educational journey in indigenous ways of being with the body. The tensions pertain to personal vis-a-vis social journey of healing, settler work with indigenous ways of being, integration being explored through separating the body into parts, and somatic experiences (body) being communicated through text and language (mind). I dive deeper into these below.

This research chooses a somatic journey to explore the diasporic condition because as the group Generative Somatics (2011) notes, a somatic journey “*is a path...by which we can embody transformation...individually and collectively....in our actions, ways of being, relating, and perceiving.... It helps to develop depth and the capacity to feel ourselves, each other, and life around us*” (p.1). The researcher foregrounds the somatic journey because it is making home of the body that opens up sustainable ways of making home of the earth, that takes one to planetary, collective and ecological healing.

This somatic work doesn't take away from the power of larger actions to question corporations' and governments' accountability, to bring about larger systems level environmental change through community, resistance, and solidarity. What this study offers are: somatic edges, cracks, and fissures in the ways of educating, living, being and relating that can open and sustain all levels of authentic environmental work. This somatic work is cyclical, slow, tender, unbound and expansive work which must co-exist simultaneously with the work of justice, planetary healing, and environmental change.

Adrienne Maree Brown (2019) affirms this connection between the body and larger systems level change when she highlights that somatics *“feels into how, in a collective or group, patterns of pain can indicate the mass, or intergenerational, trauma people are surviving. And how each of us has the power to help each feel more, heal, and move toward our longings for liberation and justice together”* (para. 10). For the larger actions for planetary liberation to sustain, to come from “right relationships”, to nourish life and not perpetuate more harm, the researcher strongly believes that one has to root into this expansive feeling of connection to one's bodies and emotions, that Adrienne Maree Brown (2019) talks about.

Secondly, this research takes a somatic journey, focussed solely on the researcher's body. The study chooses to focus on the researcher's body to decenter the rational, linguistic, capitalistic, individualistic, colonialist self by playing on the “I”. Here, the “I” is less intellectual, rational, cognitive, and more somatic, sensory, experiential, feeling, relational, entangled and reciprocal. This study subverts “I think therefore I am”, to “I somatically experience, therefore I am”, where the somatic “I” is not separate from the emotional “I” and planetary “we”.

Thirdly, this study carves this researcher's somatic journey as an educational journey because the sensory disconnection that Walla (2010) talks about through the “diasporic condition” is discussed as the failure to inculcate “natural learning” in modern education by Jinan (2022). With his decades of experience with indigenous artisanal communities and children in India, he notes that “natural learning” is learning that sustains life and not destroys it. According to him, this kind of learning is life-sustaining and much beyond the control of the learner. And this kind of education is the *“creation of knowledge of our contexts, autonomously. Learning, like breathing, is a choiceless activity as learning is the very nature of life”* (Jinan, 2022, para.7). By rooting into the somatic “I”, this work shows that the process of becoming more aware of the body is a process of natural learning and education. This work locates itself as a pedagogical opening for others to take on their own somatic

journeys of mending, restoring, and repairing one's relationship with the self and the world. This somatic educational journey is considered a part of "deep medicine" (Marya & Patel, 2021) where this pedagogical opening offers the awareness of one's place in the web of life. This somatic educational journey offers wholeness and clarity of the various relationships that make us, to heal systems within systems (Marya & Patel, 2021), to heal the interconnected systems simultaneously, partially, slowly, imperfectly and cyclically.

For an educational medicine which leans into a learning that sustains life and not destroys it, there needs to be a real rooting into this context: The "where". Bauer (2008) sheds an interesting light on the "where" located within us, when she highlights the experience of "bodies in a natural environment" as well as "bodies as a natural environment". Both experiences of being alive in a natural environment as well as being a natural environment contained in our bodies are the contexts for natural learning that this study draws inspiration from. Sheridan & Longboat (2006) write that in the Haudenosaunee cosmology "Where one is has everything to do with who one is" (p.369). In this study, "where" is understood to be the land, place, and outer landscape one is on. "Where" is also understood to be the inner landscape one is in: physical body and emotions inside the body. The "where" of my body, in my body. This "where" answers to: Where am I feeling my feelings. Where does my body hurt. Where does she feel free. Where does the anger store itself. Where is the joy felt in my body. Where do I receive love. This "where" also has everything to do with who I am. It is these various kinds of "where", inside, and outside, that this study explores through the physical, emotional, and planetary life of the researcher's body. And this is why it leans into orientations of ecosomatics, earth democracy and land-based education. All of these look at different types of "where": land, bodies, places, planet, and ecology.

The next layer of this study is its voice. The study contains three main chapters. Each chapter devotes itself to one part/process of the body: gut/digesting, breath/breathing, blood/bleeding. In these chapters, I make the bold move of writing from the voice of these parts and processes themselves. I write *as* my gut (chapter 4), I write *as* my breath (chapter 5), and I write *as* my menstrual blood (chapter 6). This writing comes from a state of awareness, of a body awakening of the gut, breath and blood and a place of experience which is more than what the words can encapsulate. These chapters embody the impulse from gut, breath and blood that enable the language, and resist language enabling the impulses of the body. Rather than language labelling and boxing the experience, the journey of these chapters is the journey of knowing, talking, and learning from my gut, breath, and blood. This voice makes this study subversive because it

articulates the sensing, feeling, heaviness, lightness, pain, digestion, breathing and bleeding to learn *from* and *with* the gut, breath, and blood. Instead of learning and talking *about* the gut, breath, and blood. This makes this study unique for these chapters sit in a liminal space where they seek to de-center language by relying on the primacy of the experience of the gut, breath and blood but simultaneously articulate that primacy through the very same language and text.

The last layer is the relocation of the academic educational journey. Each of these chapters on the gut, breath and blood involve various ritual somatic practices which bring one back to the functions of the body. The chapter on gut is grounded in the indigenous science of ayurveda from India. The chapter on breath is rooted in indigenous science of yoga from India. The chapter on menstrual blood is anchored in moontime practices from turtle island. These practices are the pathways that the researcher connected with, to explore ways of learning with and from the gut, breath, and blood, to become at residence, at home in the gut, breath, and blood. Through these practices, this thesis relocates the academic educational journey in these indigenous knowledge systems, in their facilitation of somatic experience and awareness.

Apart from these layers, there are four significant tensions in this study. These pertain to personal vis-a-vis social journey of healing, settler work with indigenous ways of being, integration explored through separating the body into parts, and somatic experiences being communicated through the text and the word.

The first tension is that this is a personal journey. It's not a communal or social journey. Even though that's the larger aspiration: to be in a planetary community through somatics. While this pedagogical exploration is not a call for isolated healing of the individual, and rather a call to be in deeper, intimate kinship with the world, this tension is still irreconcilable. This work holds space for the self-in-relationship with the world. I imagine a communal kinship journey of bodies as the future possibility of this work. However, the work as it stands now, is focussed on my body and my personal journey with this body. This was chosen because it was felt that the only way I could be in community again, after the pandemic, after series of traumas, with something to offer to this community, was first taking this journey by myself-in-relationship with the planetary kin, to heal and experience grounding, balance, and stability. I recognise that this urge to heal and gain balance through the self, away from the community, is very likely a combination of trauma response, lack of sustainable community, emotional patterns, burn-out and isolation bred by capitalism and colonialism. These tensions and knots stay irreconcilable.

Secondly, I am a brown settler from colonised lands working with indigenous ways of being and relating on this land. I cannot reconcile this tension. I discuss more on this in chapter two on educational contexts. Thirdly, while this work locates itself in offerings of integration, reconnection and wholeness, the exploration does break the body apart to focus on different parts through the gut, breath, and menstrual blood. This is a tension that I cannot reconcile. Fourthly, while this work anchors itself on the sensory, somatic, experiential body, the only way it communicates this body is through language and text. The tension between the primacy of the experience vs. language, the “world” vs. the “word” is held within this work.

In this study, in this journey, I seek ways through these tensions, by “staying with the trouble”, to answer the question of what it means to do this work of becoming home in one’s body, in this time and place, in relationships with the emotions and the planet, emerging in the here and now.

Research questions

Based on the discussions above, and while holding onto all the tensions in this study, there are four research questions that this work explores:

1. What ways of living in relationship to my physical, emotional, and planetary life encompass my gut?
2. What ways of living in relationship to my physical, emotional, and planetary life encompass my breath?
3. What ways of living in relationship to my physical, emotional, and planetary life encompass my moontime blood?
4. How do these explorations with the body add to an ecosomatic, earth democracy infused, land-based environmental education?

Guide to Chapters

This study involves six chapters including this one. Chapter 2 dives into context, into educational orientations, and a literature review of ecosomatics, earth democracy and land-based education. Chapter 3 outlines the methods that this research uses in the form of autoethnography layered in psychodrama, and body mapping to conduct this exploration. Chapter 4 answers research question one and explores living ways of the gut. It is written from the voice of my gut *as* my gut. Chapter 5 answers research question two and explores living ways of breath. It is written from the voice of my breath *as* my breath. Chapter 6 answers research question three and explores living ways of menstrual blood. It is written from the voice of my blood *as* my blood. Each of these chapters

follow the same thematic scheme of first diving into the physical life of the gut, breath, and menstrual blood, then moving into their emotional lives and ending with an exploration of their planetary entanglements. Chapter 7 is the conclusion chapter where this somatic educational journey with the gut, breath and blood is made sense of through re-visiting the research questions of this study and taking stock of how deep and far the researcher has travelled through these explorations.

Chapter Two: Context

In this study, the physical, emotional, and planetary journey that the researcher undertakes in and with her body is framed as an educational journey. This journey moves through sensing, feeling, digesting, breathing, bleeding, and relating with my body. Through this, the study offers pedagogical learnings around what it means to do this body-work, which is entangled and nested with physical sensations, emotions, and the more-than-human planetary beings, in this time and place, during an ecological crisis.

Because this educational journey is an exploration of making home of our bodies in connection with making home of this planet, it is framed by, and converses with the fields of ecosomatics, earth democracy and land-based education which contain scholarship on ecology, somatics, body, land, planet and earth family. I describe the reasons for choosing each of these three scholarships below.

This study chose ecosomatics because it directly connected ecology and somatics. Infusing energies from ecosomatics grounded this research in body-work and the inter-relationships that a body shared with the planet (Walla, 2010). It foregrounded the relational body, a body which exists not in isolation but in relationships with the planet. However, the field of ecosomatics is limited by its immersion in a dominant type of “somatics” or body - white, non-marginalised, reductive, essentialist (Nuding, 2021; Ginot, 2010). Another limitation of ecosomatics is the discourse on “ecology” which actively omits accountability to colonialism, land theft and other harmful relationships that shape the land and its ecology (Nuding, 2021) and are responsible for the ecological crisis we face today.

I cover these two gaps in the scholarship on ecosomatics in two ways: First, I subvert the main discourse in ecosomatics on “body” by focussing on my brown, marginalised, queer women’s body full of vulnerabilities, sensations, aches, life force, promiscuities, permeabilities and desperations. Second, I add discussions on place, land, settler colonialism, justice and democracy into the “ecology” of ecosomatics by drawing from earth democracy and land-based education. This planet and the land that the researcher is on, are shaped by colonisation. It felt important to open up this research to questions of how to create relationships with the land as a settler and how to become “naturalised to place” (Kimmerer, 2013) as a brown, queer, settler women with lineages to colonised lands of India and Pakistan. Land-based education was chosen to offer energetic openings into these important questions. Furthermore, what earth democracy did was offer a big

picture narrative of the whole planet as one being (Shiva, 2005). It celebrated the continuum of personal-communal-planetary harmony, honoured in indigenous cosmologies and earth-based cultures around the world since time immemorial. These included the ideas of Vasudhaiv Kutumbakham or “Earth is Family” from India (Shiva, 2005) and Sumak Kawsay or Buen Vivir from Ecuador and Bolivia roughly translated as “good living” (Balch, 2013) or “good life” (Gudynas, 2011). These ways of living, being, knowing and relating with the planet from the scholarship on earth democracy offered crucial additions into this study’s work with the planet and this was the reason for choosing this field. Thus, both earth democracy and land-based education extended the discourses of “ecology” in ecosomatics in unique ways and this is the reason these two fields were chosen to guide this educational journey, in addition to ecosomatics.

All put together, the three scholarships of ecosomatics, earth democracy and land-based education form different parts of an “educational compass” for this study. Each of them offer orientations and directions for the navigation of this study as an educational journey. In what follows, I discuss in more detail, the literature in each of these three scholarships, their limitations, and the ways I extend these ways of knowing. In the sections below, I begin with ecosomatics, then move to land-based education and end with earth democracy.

Ecosomatics

Walla (2010) defines ecosomatics as the “art of sensing the inner body to connect to the greater social and planetary body” (p.3). A conversation between the body and the ecology is ecosomatics. Through eco-somatics, this research locates itself in learning and sensing of the inner body as a way of connecting to the larger earth-body.

The discourse on ecosomatics is a colonised conversation which doesn’t acknowledge that the inter-connection of body and ecology has true lineages in Indigenous ways of knowing which have considered the land and our bodies as interconnected beings (Walla, 2010). Indigenous cultures have seen bodies as microcosms reflecting the earth’s macrocosms wherein respecting one is respecting the other (Walla, 2010). Jeanette Armstrong, an Okanagan teacher, and scholar from traditional council says, “*Okanagans teach that body is earth itself. Our flesh, blood and bones are earth-body; in all cycles in which earth moves, so does our body. As Okanagans we say the body is sacred. It is the core of our being which permits the rest of the self to be. Our word for body literally means “the land dreaming capacity”*” (Armstrong, 1995, p.4). This is the core of the ecosomatic relationalities that this research delves in, through the physical, emotional, and planetary life of my gut, breath and moontime blood. It

sees the body, emotions, and planet as extensions of each other, as one and the same where “body is earth itself”.

Ecosomatics is a word made from “eco” and “somatics”. “Somatics” is made from “soma” which means experiencing the body “from within” (Bauer, 2008). Soma is the felt sense of one’s subtle inner body and is very different from the appearance of the outer body (Walla, 2010). It is important to note that this isn’t about how the body appears or looks but rather an inner experience. Experiencing and sensing this inner body or “soma” is “somatics” (Walla, 2010). This field perceives “somas” as living and changing systems in constant relational engagement with the environment and is rich with possibilities of adding onto post-human relational thinking (Nuding, 2021). By shifting the locus of expertise from the outside to the inside, somatics tells us that we can actively participate in our own healing through our innate knowing of our body (Walla, 2010). The “eco” in ecosomatics encompasses an organism’s way of relating with the environment and the world in this layered matrix of movement and body (Bauer, 2008). While “somatics” is about movement, senses and the relationship with the inner world, “eco” is about the environment and ways of relating with the outer world (Bauer, 2008). In a world made of discrete but permeable boundaries, ecosomatics asks us to connect with the “earth-body” through our bodies (Walla, 2010).

This permeability of boundaries is what runs through this research. The boundaries between “inner” and “outer” flow into each other. While somatics opens the space inside us to questions like: how do I feel? how do I feel when I move? what am I learning when I move? and what are my curiosities?; Ecosomatics opens the space to questions around: where do I place myself in the whole? what is my place in the body? what is my place in the everyday life? and what is my place in my community? (Bauer, 2008). Therefore, through ecosomatic practices, one learns to become more aware of the “inner and outer landscape” to encourage our senses to experience body *in* a natural environment as well as body *as* a natural environment (Bauer, 2008).

While this research is oriented by ecosomatics, it is important to note that it also subverts the historically colonial discourse on ecosomatics. The field of somatics, is still credited to have been developed in the early 20th century, by Thomas Hanna, a white man (Bauer, 2008; Walla, 2010). Having emerged in US and Europe of the 20th century, the discourse of somatics is heavily engulfed in systems of colonialism (Nuding, 2021). Even though this lineage of somatics is credited by colonial western paradigms of knowledge to be Greek, many indigenous systems, including India’s

science of yoga, have rich lineages of looking within to become aware of one's body (Iyengar, 1996, 2008; Johar, 2020).

It is also important to highlight that the positionality of somatics is crafted in such a way that it is perceived as an alternative to western science because of how holistically it understands the body but this position of being the “alternative” veils how it is implicated in colonialism (Nuding, 2021). The fact that Thomas Hannah, a white male, is credited with the naming of the field of somatics reflects something deeply problematic. History is full of white men claiming something as their own. Furthermore, even the practices that are understood as being “somatic” in the mainstream somatic discourse are mostly European and American practices (Bauer, 2008).

A major blind spot of somatics is that *“behind the insistence of singularity of each corporality, most somatic methods have as a backdrop a homogenous, universal, ahistorical and occidental body”* (Ginot, 2010, p. 23). Through this essentialist discourse where there is no space for bodily experiences of different races, ethnicities, genders, sexualities, and (dis)abilities, the field of somatics ends up furthering the marginalisation of already marginalised bodies (Nuding, 2021). The discourse of the “body” in somatics lacks an adequate critical and reflexive examination of this complexity (Nuding, 2021). This research subverts and opens up ecosomatics by diving into the unique sensorial and corporeal life of a marginalised body, which here is the researcher's physical body, her emotions, and her relationships with the planetary kin.

Furthermore, the “eco” in ecosomatics is used interchangeably to mean either “ecology” or “environment” and both words have been heavily contested sites of histories and epistemologies encompassing nature/culture binaries closely connected to the colonial binaries of settler/indigenous and white/non-white (Nuding, 2021). Additionally, when ecosomatics moves through the human and more-than-human boundaries by relying on various elements like wind, water, trees etc., it walks a fine line between two discourses: on one hand is an ecological discourse rooted in entangled relationalities with the more-than-human and on the other hand is a discourse rooted in colonial constructions of nature as something “out there” which can be used and appropriated as per human needs and desires (Nuding, 2021).

Therefore, there is a “double pitfall of ecosomatics”, as Nuding (2021) calls it, wherein both its constituent discourses of “somatics” and “ecology” are perpetually in tension between ignorantly replicating oppressive structures and being critically accountable of these oppressive structures. It

is in this fissure and crack that this research comes in, subverts these replications, stays present with the tensions, the complexity, non-linearity and messiness of this work and holds itself accountable to these oppressive structures through a body of a brown settler women on turtle island having ancestral lineages from the colonised lands of India and Pakistan, making meaning of her physical, emotional and planetary life while learning respectful ways of being in this body, on this land.

This research responds to the invitation that Nuding (2021) offers in creating a differently textured ecosomatics rooted in an ethics of entangled relationality while also critically engaging with the colonialist-universalist constructions of bodies and nature to explore “*what kinds of natures, bodies, ecology and environment are engaged with, under the rubrics of ecosomatics*” (p.36).

After discussing the literature and limitations of ecosomatics, I dive deeper into Nuding’s invitation of cracking open “natures”, “ecology” and “environment” in ecosomatics through conversing with the literature on land-based education and earth democracy to bring in “land”, “colonisation”, “justice” and “democracy” into “ecology”. In the sections that follow, I explore the ways of extending and filling the above-mentioned gaps in ecosomatics through the scholarship on land-based education and earth democracy. I devote the following section to land-based education and later move into a section on earth democracy.

Land-Based Education

It is to deepen the crack in the discourse on ecosomatics that land-based education offers complexity to the “eco” in ecosomatics. By drawing energies from land-based education, this research holds itself to accountable to oppressive structures and colonial constructions of nature and places. There are important questions that land-based education asks of an ecosomatic study which explores the researcher’s somatic body and her ways of living, digesting, breathing, and bleeding on turtle island as a settler, with ancestral relationships to the colonised lands of India and Pakistan. Some of these are: how do I form meaningful relationships with a colonised land, in a colonised planet as a settler, can I aspire to become naturalised to a place in the spirit of reciprocity and respect as a settler without letting go of my responsibilities as a settler? This study stays with the discomfort of these questions. It defies the colonial urge and need to become an instrumental project of problem solving or fixing the body to respond to colonialism.

Before I explore the literature on land-based education in depth, it is important to clarify that this study had an option of also conversing with place-based education as way of shaping meaningful engagement with place. However, the reason for choosing against that was the “incommensurability”, as noted by Tuck & Yang (2012), which place-based education shared with land-based education because of the absence of decolonisation in the former. Tuck et al. (2014) highlight that both these educations are epistemologically and ontologically different types of education. While place-based education glosses over the continuing presence of indigenous people on indigenous lands by calling for “re-inhabitation” through education, land-based education directly confronts how education contributes to the ongoing occupation of indigenous stolen land by settler colonialism and calls for pedagogies that center indigenous relationships to land. Thus, the researcher felt that land-based education was a richer, more authentic space of approaching a somatic environmental education.

Land-based education is a diverse and vast field in environmental education. Calderon (2014) highlights that land-based education operates under the fundamental principle that “all places were once indigenous lands and continue to be” (p.27). She adds that wherever the aim is an education which is centered on a place, there has to be critical reflection on “what it means to inhabit lands that were once (and continue to be) the homelands of indigenous nations” (p.27). It is in this question posed by Calderon that this study explores what it means to do environmental education on this colonised land, in this time, in this place, which was and continues to be native land.

Dr. Amy Parent, from Nisga’a Nation says that land based education “centres respect, reciprocity, reverence, humility and responsibility” with the land and towards the land (CCUNESCO, 2021, p.2). Dr. Alex Wilson from Opaskwayak Cree Nation says that this kind of education is rooted in relationships and in knowledges that come from the land where land is not just physical but also cultural and spiritual (CCUNESCO, 2021).

Kimmerer (2013) in “Braiding Sweetgrass”, sheds light on the core principle of land-based education: the land holds all the knowledge that one needs to live in this world and that it is through reverence and respect for the land and her indigenous keepers that one can form a relationship with the land, from a good place. According to her, it is learning how to be on land in “deep reciprocity that renews the world” (p.213). The foundational question she asks her “sitka spruce grandmother” is of “how it is we come to belong to a place” (p.212). This is the inquiry that energises land-based education. This is the invitation that this research takes up, in exploring how the researcher’s body, gut, breath and moontime blood shape how the researcher connects to her

environment through relationships and entanglements that span the physical, emotional, and planetary realms.

Calderon (2014) notes how land-based education is better suited to critical pedagogies centered on the land which keep the people indigenous to those places at the centre and directly confront settler colonialism. By making the connection between land and settler colonialism explicit, land-based education carves a pedagogy that heals, instead of perpetuating a land ethic that views land as a resource to be exploited along with the elimination of indigenous people and their relationships that have sustained and nourished the land in reciprocity (Calderon, 2014).

Decolonising land-based education is incomplete and futile without acknowledging that “decolonisation in settler colonial contexts must involve repatriation of land” which involves all of land, not just cultural and symbolic relationships to land (Tuck & Yang, 2012, p. 7). This study sits with the awareness of this materiality and physicality of the living land and the continuing annihilation of indigenous people of this land which is meant to unsettle and interrupt settler futures (Tuck & Yang, 2012).

Wildcat et al. (2014) note that land-based education is centered, not in reconciliation but in “indigenous resurgence” as it originated in Alfred (2005) who located the “resurgence” in regeneration and revitalisation of indigenous knowledge and practices which in turn confront the harms that settler colonial knowledge has caused. Wildcat et al. (2014) view land-based education as being a catalyst and offering more energy to this resurgence. Land-based education defies the reproduction of colonial knowledge and repairs, restores, and heals the harm that settler colonial knowledge has caused by being inextricable from indigenous resurgence and the myriad ways in which indigenous knowledge contests settler colonialism (Simpson, 2014; Wildcat et al., 2014).

Approach to land-based education as a settler of colour

Tuck & Yang (2012) point out how the work of decolonisation in land-based education is unsettling and irremediable in all the tensions and interruptions it contains. It is not meant to resolve or fix my settler guilt or anxiety. It is meant to be uncomfortable. They note that “settlers are diverse...and include people of colour, even from other colonial contexts” and this “complicates what is meant by decolonisation and by solidarity against settler colonial forces” (p.7). Wildcat et al. (2014) note the need for further research and articulation in the role of non-indigenous persons

of colour and other intersectional anticolonial approaches to land, in this journey through land-based education.

It is in this complexity, in this crack and fissure, that this research delves into education as a brown woman's somatic settler body. It is also important to note that the place this research comes from, and the kind of education this research aspires to, is not of "indigenising" but of striving towards "naturalising to a place" as discussed by Kimmerer (2013). This research honours that one can never be indigenous to a place that one is not born in or has ancestry in. It honours that, as a settler, I am always implicated in the ongoing harm of settler colonialism, irrespective of my intentions. This study holds onto the above awareness while exploring the ways that immigrants and settlers can inculcate respectful ways of relating to a place, epitomised in indigenous cultures (Walla, 2010).

Kimmerer (2013) discusses "naturalising" through an immigrant plant, *Plantago Major*, also called the "white man's footstep", which arrived with the settlers. Because of how well this non-indigenous plant adapted and integrated into the native ecosystem, it was soon considered a "naturalised" plant, just like a foreign-born person naturalised to the citizenship of a place (Kimmerer, 2013). She elaborates that this work of "*being naturalized to a place means to live as if this is the land that feeds you, as if these are the streams from which you drink, that build your body and fill your spirit... To become naturalized is to live as if your children's future matters, to take care of the land as if our lives and the lives of all our relatives depend on it. Because they do.*" (Kimmerer, 2013, p.214-215). This "naturalisation" is the work of making home of this earth and simultaneously, also the work of 'making home' of our bodies. One is incomplete without the other (Walla, 2010). This is the work that this research simmers in.

While Kimmerer's (2013) "naturalisation" offers grace and light in this journey of research, it is also simultaneously important to highlight that the somatic texture of land based education that this research carves is not an attempt to "escape or contain the unbearable searchlight of complicity" in settler colonialism, in harm, in violence, that the researcher is implicated in, as a woman of colour staying in turtle island (Tuck & Yang, 2012). The aim is not to reconcile or find innocence or relief but rather to stay with the tension, discomfort, to stay unsettled, to stay with irreconcilable ways that I am implicated in ongoing harm on this land. This research sits with the unbound, unresolved, and unsettling work with the body in relationship to the land, without wanting to escape settler guilt or responsibility. In sitting with these entanglements and "staying

with the trouble” (Haraway, 2016), this pedagogical exploration opens up spaces and questions that staying with this land-work and earth-work anchored in body-work bring up.

Earth Democracy

Vandana Shiva’s work on earth democracy is a significant third part of the “educational compass” for this pedagogical study. The seed of Earth Democracy lies in the Indian civilisation’s idea of Vasudhaiva Kutumbakham which means that the Earth is one family (Shiva, 2005, 2019a). The core belief behind this ancient Indian principle is the perception that nature is conscious, intelligent and alive. Shiva (2005, 2017) notes that within this lineage of seeing nature and earth as alive, earth democracy embodies the aliveness and freedom of all species to participate in this alive-ness, in life on this planet. And this simultaneously involves the freedom and duty of humans to support and facilitate this freedom for all species on this planet, as members of the earth family. Navdanya (2021) notes that *“Earth Democracy is a world view, paradigm and practice that is based on the recognition that everything is interconnected, the Earth is living, the Earth has rights, that we have duties to care for the Earth, and regenerate her soil, seeds and biodiversity, her water and food systems. Our rights flow like a spring from our duties”* (p.7).

Shiva's (2005) location of earth democracy in a sense of earth family and making home of this planet is also founded upon the interdependence and interconnection of all life forms: earth, water, plants, animals, human and more-than-human life. This inter-relationship makes all of us “members of an earth community” (Shiva, 2010). The illusion of separation and fragmentation harms the whole web of this earth community because as Shiva (2019) highlights *“every wrong action with respect to the land is a wrong action with respect to biodiversity, is a wrong action that leads to consequences for our health, is a wrong action that creates conflicts and the end of peace and is a wrong action that leads to more emissions. Land degradation, biodiversity, erosion, public health, women’s situations, climate change, are not separate. They are just different facets of the same process, which is an indifference to the ecological processes of the Earth, and living at war with the Earth”* (p.7). Earth democracy seeks to restore reverence for ecological processes of earth and sheds light on ways of living which are in harmony with the Earth.

For earth democracy, this earth is the living earth, Mother Earth, Terra Viva, Pachamama, Dharti Ma, Bhoomi and Gaia. All of these pluralities and diverse cosmologies which emerge from diverse places and cultures are part of earth democracy, because diversity is the root of this democratic tradition. Shiva et al. (2015) note that earth democracy “recognizes the intrinsic worth of all species

and all people. Because all people and all species are, by their very nature, diverse, it recognizes diversity as not something to be tolerated, but something to be celebrated as the essential condition of our existence...” (p.20). Through this celebration of diversity, earth democracy encompasses all forms of life with “anna swaraj” or living food, “bhu swaraj” or living soil, “bija swaraj” or living seed, “jal swaraj” or living water, and “gyan swaraj” or living knowledge (Navdanya, 2021). All of these together make a living earth democracy.

I extend and deepen the scholarship on earth democracy by adding another diversity in the rich mix of diversities mentioned above. This is the diversity of living somatic bodies in relationship with all the other diversities of earth democracy involving food, seed, water, soil, and knowledge. This study contributes to envisioning an earth democracy which celebrates different somatic bodies and their ways of being, knowing and relating to the earth and the earth family.

Interestingly, the seed of this study’s vision, seeing the body, emotions and the earth as extensions of each other lies in Shiva’s (2017, 2019) scholarship on the gut microbiome. Shiva (2019) says that “Diversity in the field and diversity in the gut is deeply, deeply integrated”(p.6) that “the health of the soil, the health of the plants, the health of our gut, and the health of our brains is one continuum”(p.10). This conception of the gut microbiome being one continuum extending into the soil was the seed for this study to see the whole body as an extension of the earth.

This research explores questions around what kind of earth democracy is created when the body in relationship with the earth is honoured, what kind of democracies are birthed when one honours the democracy of the somatic body, what kind of diversity is dreamed into a liberated earth family where diversity of bodies is as important as diversity of the mind and what kind of living earth family is shaped with a celebration of the living ways of the gut, breath and blood.

Conclusion

To summarise, the orientations of ecosomatics, land-based education and earth democracy infuse energies into this unique pedagogical exploration which hopes to heal, dream, digest, breathe and bleed new somatic, emotional and planetary worlds. Furthermore, while this research is oriented by ecosomatics, it is important to note that it also subverts the historically colonial discourse on ecosomatics. This study subverts the “double pitfall of ecosomatics” involving limitations of the discourses on somatics and ecology. It defies the essentialist discourse of somatics and honours space for the sensorial and corporeal life of the researcher’s marginalised body which offers

openings to other kinds of bodies of different ethnicities, genders, sexualities and (dis)abilities which often tend to be marginalised in the discourse on somatics.

This study also subverts colonial notions of “ecology” and “environment” embedded in ecosomatics by drawing on energies from land-based education and earth democracy which offer questions, tensions, complexity, non-linearity, and messiness into notions of environment through bringing “land”, “colonisation”, “justice” and “democracy” into the discussions. This study poses questions that reflect on what it means to live on lands that were and continue to be colonised lands, stolen from indigenous people, what it means to do environmental education on this colonised land, in this time, in this place, which was and continues to be native land, how to create relationships with the land from a place of reverence and respect for indigenous keepers of this land, how to interrupt the harm that settler colonial knowledge has caused. This study opens up to these questions to hold ecosomatics accountable to the oppressive structures that perpetrate colonialism and shape ecology all over the world. This research also explores the role of a non-indigenous, settler person of colour and other intersectional approaches to land, in the journey it takes with questions posed by land-based education. This study also sits with the unbound, unresolved, and unsettling work with the body in relationships to land, without wanting to escape settler guilt or responsibility while also exploring what it means to become naturalized to a place.

Furthermore, this study brings in energies from earth democracy to connect with the experiences and notions of earth as one family through the scholarship on earth democracy. It honours the various diversities embodied in earth democracy around food, water, soil, seed, and knowledge. The study notes a gap in this scholarship where bodies are not offered as much focus in this planetary work. This research extends the scholarship on earth democracy by adding the diversity of living somatic bodies into the discourse of earth democracy. It does so by exploring questions of what kind of earth democracy is created when the body in relationship with the earth is honoured, what kind of democracies are birthed when one honours the democracy of the somatic body, what kind of diversity is dreamed into a liberated earth family where diversity of bodies is as important as diversity of the mind. Thus, this is how this study extends and fills the above-mentioned gaps of somatics and ecology in ecosomatics through the scholarship on land-based education and earth democracy. Through questions, this study opens up a differently textured ecosomatics which subverts the colonialist-essentialist constructions of bodies and nature by rooting into an ethics of entangled, corporeal, and somatic relationality.

Chapter Three: Methods

This study uses autoethnography as its primary research methodology. It also draws from psychodrama and body mapping as tools of data collection that open up autoethnography to reveal the somatic sensations and experiences of the body and narrate these experiences in ways that stay true to the primality of the senses. Psychodrama and body mapping offer supporting energies to make the autoethnographic process more ecosomatic, body-focussed, instinctual, intuitive and relational. Apart from the primary research through “data” collected from the body via autoethnography, this study also engaged with secondary research conducted to support and extend what came up in the primary data through books, magazines, journal articles and blogs on various databases like the Humanities International Index, JStor, Academic One File, Project Muse, ProQuest and ProQuest Dissertations & Theses Global. Additionally internet search engines (Google and Google Scholar) were also searched. All these platforms were chosen to provide this research with a wide range of interdisciplinary perspectives which this research necessitated. Secondary research was conducted using the following keywords : “somatic body”, “physical body”, “emotional body” and “planetary body”.

It is important to note that this research is already an educational journey and process of sorts. So this method chapter deals with the process that lies within the larger process of environmental education that this research embodies. This chapter sheds light on how I arrived at the educational process of ecosomatic journeying with the body, how I worked with my body to arrive at the final ecosomatic journey of the gut, breath and blood to envision an earth democracy infused, land-based environmental education.

In the sections that follow, I discuss the research design of this study by diving deeper into how I use the methodology of autoethnography. After this, I move into the tools of data collection of body mapping and psychodrama to show my process of collecting, assembling, making meaning of the process with the somatic body.

Research Design

Research Aim: The central question that this research explores is how to make home of this body and the planet, in the specific time and place that one lives in.

Place and Timeline of the study: The research was conducted from May 2022 to September 2023, in Tkaronto, Turtle Island.

Research Method

This study used autoethnography as the overarching research method to guide the process of working with the researcher's somatic body and make meaning of all the experiences, events, feelings, sensations, awareness, and kinships that my somatic body shared with my inner and outer worlds. Autoethnography as a research method has a rich and layered scholarship. It takes qualities from both autobiography and ethnography where researchers make sense of their past while acknowledging the contextual cultural roots that make this past possible (Ellis et al., 2011). Thus, autoethnography is a study of the self-in-relationship with the larger society. Described both as “a process and a product”, it investigates the personal to shed light on the cultural and paints research as an inherently political act (Ellis et al., 2011). Allen (2015) notes that “understanding ourselves in relation to the larger communities in which we interact is only possible through careful self-examination” (p.35). Wall (2006) adds that the “intent of autoethnography is to acknowledge the inextricable link between the personal and the cultural and to make room for nontraditional forms of inquiry and expression” (p. 155). This study chose autoethnography because I felt that this method, through its qualities of being both a process and an outcome, both personal and cultural/political and having space for unconventional explorations, was a well-suited guide for achieving the aim of the research which was to understand the process of making home of this body and this planet, the process of understanding the various relationships that my body shared with the planet.

Also, I was faced with a novel research conundrum for environmental/planetary education where the units of data and analysis are usually conceptual, epistemic, linguistic, but in this case, my data was to be corporeal. The researcher felt that autoethnography came the closest to facilitating insights from corporeal data.

Furthermore, Custer (2014) defines autoethnography as a “style of autobiographical writing and qualitative research that explores an individual's unique life experiences in relationship” with the socio-cultural contexts of this individual (p.1). Ngunjiri et al. (2010) defines autoethnography as “a method that utilizes data about self and its context to gain an understanding of the connectivity between self and others within the same context” (p.2). It is in this sense of connectivity that this

method moves beyond the individual by considering the exploration of the self and exploration of the context as one and the same (Ngunjiri et al., 2010).

While different studies locate themselves in varying relationships with this method, I find the “autoethnography continuum” by Ellis & Bochner (2000) to be a good guide through my process with the body. Ellis & Bochner (2000) note that autoethnography is constituted of “auto”, “ethno” and “graphy” and that “autoethnographers vary in their emphasis on the research process (graphy), on culture (ethno) and on self (auto)” where “different exemplars of autoethnography fall at different places along the continuum of each of these three axes” (p.740). Drawing from this continuum, this research locates itself more in the sphere of “auto” (self) rather than “ethno” (culture). This study belongs to the autoethnographic tradition of being “highly personal” and “evocative” (Ellis, 2004; Wall, 2006). It is closer on the continuum to being a personal narrative where researcher’s life experience is the phenomenon under study and the readers are invited into the researcher’s life where both the researcher and the readers are witnessing, validating and making sense of their life’s experiences (Ellis, 2004; Ellis et al., 2011).

One of the major tensions in the scholarship on this research method is between “evocative”(Bochner & Ellis, 2016) and “analytical” autoethnography (L. Anderson, 2006). This “push and pull” signifies the tension between the personal and social (Jones & Adams, 2016). While this research locates itself in the more evocative traditions of autoethnography, the very need to pin down and delineate this method is negated by Jones & Adams (2016) who call for another way of looking and opening up its “definitional boundaries”. They echo Gingrich-Philbrook (2005) who calls for looking at autoethnography as a “broad orientation towards scholarship” instead of a rigid set of procedure or method. It is in negating the (colonial) binaries of “evocative v. analytical”, “personal v. social” that a different way of knowing can be explored in research.

This research uses autoethnography as a method, from this open, fluid and flexible place of a “broad orientation” which challenges, contests and “unhinges” the dominant and linear ways of seeing, knowing and researching in academia (Ellis et al., 2011; Gingrich-Philbrook, 2005; Jones & Adams, 2016). This study approaches autoethnography as a way of guiding the process of working with the body, a process which “embraces fluidity, resists definitional and conceptual fixity, looks to self and structures as relational...” and “recognizes that bodies are immersed in

and fixed by texts but also recognizes these bodies as doing, speaking and understanding beings forthrightly incomplete, unknown, fragmented and conflicting” (Jones & Adams, 2016, p.211).

Within the fluid, and flexible place of a “broad orientation”, this study adapts the “self” of autoethnography into being the researcher’s somatic body. For this research, the connections, and relationships that the “self” shares with the world were adapted into being the relationships, contexts, and kinships that my body shared with the world.

Within autoethnography, this study adopted a narrative approach of Rosemarie Anderson's (2001) “embodied writing”. This is a narrative study which uses “embodied writing” that “brings the finely textured experience of the body to the art of writing” (p.83). This kind of narrative approach conveys “human experience from the inside out and entwining in words our senses with the senses of the world, embodied writing affirms human life as embedded in the sensual world in which we live our lives” (p.83). Through this narrative approach, the autoethnographic method brought up the following embodied connections of my somatic body: suffocation, air, injuries, pain, ache, illness, desperation, grief, earth, hyperventilation, fire, tightness, anger, stiffness, lightness, water, shame and heaviness. The more I sat with these, I was able to dive deeper. The autoethnographic method held a lot of space for me to be deeply personal, introspective, subjective and intimate and considers emotions to be a valid source of data (Custer, 2014; Ellis et al., 2011; Ngunjiri et al., 2010; Wall, 2006). The emotions that came up for me, on deeper reflections were shame, joy, grief, anxiety, fear, and anger. As Ngunjiri et al. (2010) notes, it is not possible to achieve the depth that autoethnography opens up, to witness and to dig deep into oneself to explore one’s inner world, in other methods of research.

Through the autoethnographic process of journaling and sitting with the various connections and relationships that surround my body, what emerged were the three main types of bodily relationships that this study would focus on: physical, emotional, and planetary. The connections that were physical sensations of suffocation, pain, ache, illness, hyperventilation, tightness, stiffness, lightness, and heaviness emerged as the physical life of the body. The emotions of shame, joy, grief, anxiety, fear, and anger emerged as the emotional life of the body and the connections with nature’s elements of water, fire, air, earth emerged as the planetary life of the body. These three kinds of connections and relationships brought in clarity for the process with the body. Once,

I decided on these three relationships I could take this exploration further. A picture from the research journal, reflecting this stage of the process, is given below.

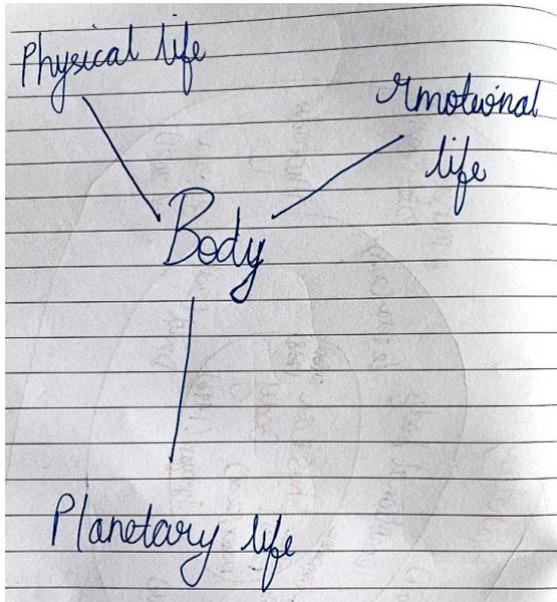


Figure 2: Picture from my research journal

Once the three types of relationships were chosen as the focus, I dived into secondary online research to explore what could guide me further into these three relationships of the body, to start working with the three kinds of bodies themselves: physical body, emotional body, and planetary body. Secondary research supported the previous autoethnographic reflections. A small visual glimpse into this part of the process is given below.

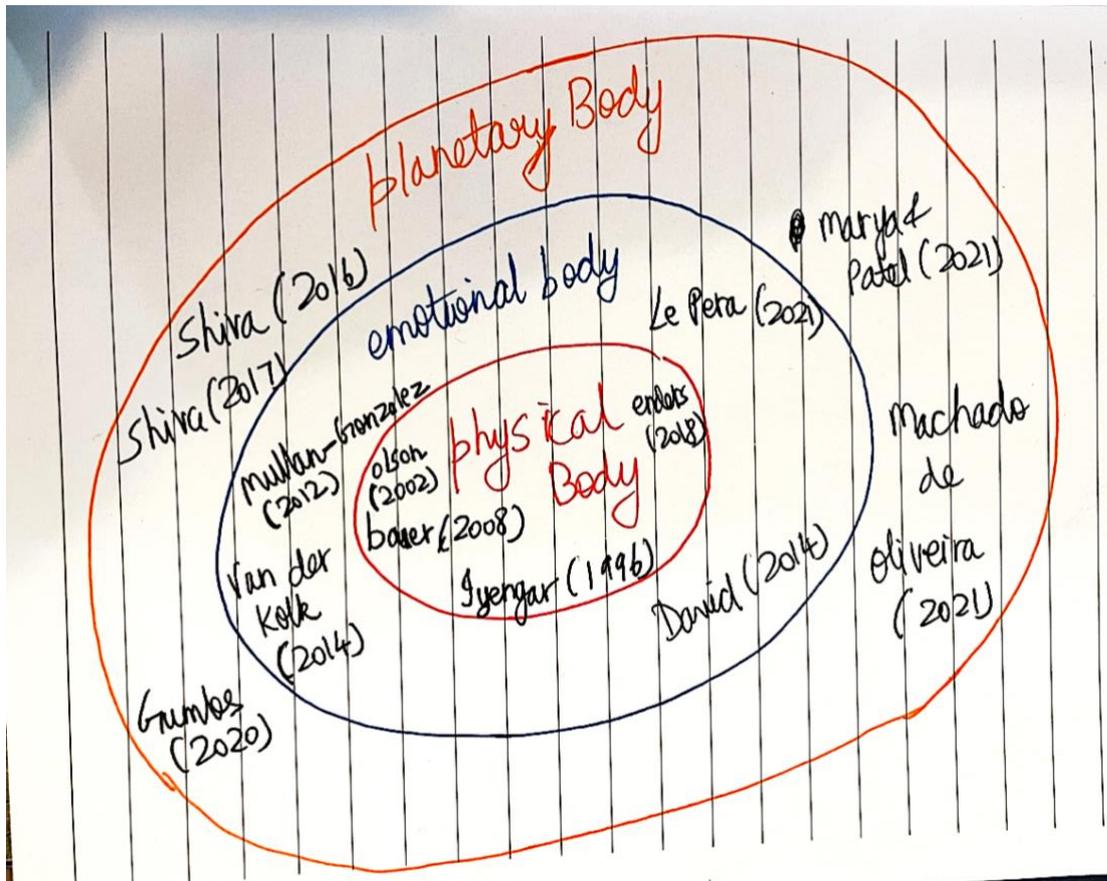


Figure 3: Secondary research in autoethnographic journal

This stage of the process brought in multiple readings that would support the three different kinds of lives of my somatic body. Autoethnography focusses on the self, on the context of the self while also holding space for multiple ways of knowing and communicating this self (Custer, 2014; Ellis et al., 2011; Ngunjiri et al., 2010; Wall, 2006). Because of this plurality, as pointed out by Ellis (2004), autoethnography holds space for non-linearity and uncertainty where the rhythm of the research is arrived at with time: unconventionally, experimentally and creatively. This makes autoethnography fluid and varied (Wall, 2006). This rhythm of research was arrived at, with the fluidity and iterative-ness of this study's process with the body. It took various iterations of journaling and secondary research to arrive at the clarity seen in the picture above.

Jones & Adams (2016) aptly note, autoethnography is “often criticized for too much or too little – too much personal mess, too much theoretical jargon, too elitist, too sentimental, too removed, too difficult, too easy, too white, too western, too colonialist, too indigenous. Yet at the same time,

too little artistry, too little theorizing, too little connection between personal and political, too impractical, too little fieldwork, too few real-world applications” (p.197). According to them, this is the very quality that makes this method fluid. In being “too much or too little” autoethnography remains uncontainable and refuses a clean and bound category. This fluidity helped the process with the somatic body because it allowed me to tune into whichever aspect of the body’s relationships I was feeling called to work with, from within, without there being rigidity around a linear chronology or sequence of working with the three types of relationships.

Spending considerable time with this method brought in various tensions and struggles to the surface. While autoethnographical studies don’t have many procedural ethical hurdles to move through, many intricate, complicated and heightened relational ethics do come into play (Ellis, 2007; Ellis et al., 2011). I realized that research which involved the self automatically involved others who one is intimately connected to, through the context of the self. Ellis et al. (2011) note that as autoethnographers, “when we conduct and write research, we implicate others in our work” (p.281). In this study, while the focus was on the body and experiences of my body, I did journal and write about my dead father, my alive mother, and my body in relationships with my community. These relationships made and unmade the somatic ways of being and living in this world. All of these had relational ethical implications. Ellis (2007) says that “all autoethnographers must resolve how and what to tell intimate others about how they have been included in our stories” (p.17). I realized, through the process of working with the body that that these relational knots have no way of being “fixed” and “solved” as per a standard rulebook. It was the risk of hurting someone close to me that I had to take, for the writing to be authentic. It was helpful for me to “assume everyone in your story will read it” (Ellis, 2007, p.25). This is how I engaged with the autoethnographic practice of writing with my body, as my body, about the relationships that participate in the life of my body. I assumed everyone I would mention in the research as part of my lived experiences, would read this research. I have tried my best in holding everyone in their dignity while being authentic and true to the experience. In this process, it was helpful to remember that this work is difficult, layered, nuanced and has consequences for the world and relationships that I will continue to live in, much beyond this research (Ellis, 2007).

Another struggle to navigate with this method was how much to expose of my life in the writing, how much vulnerability is necessitated by the research and how much privacy is necessitated to live the life I live (Custer, 2014; Ngunjiri et al., 2010). This tension was a difficult one to navigate. Many of the themes that this research touched upon were difficult to write about because they

made me vulnerable and opened old wounds. As Raab (2015) points out, it can be emotionally intense to move through the research when the autoethnographical study pertains to painful experiences. Custer (2014) echoes that when old wounds are exposed, “it is at first cold and calloused and terrifying but by keeping our eyes open, the courage of being naked and vulnerable begins to heal our gashes” (p.4). Ellis (2007) highlights that “writing difficult stories is a gift...to construct meaning in our lives and heal or grow from our pain” (p.26). This process of working with the body and researching with the body demanded a lot of courage and strength. This process also offered healing and growth from the pain of revisiting intense experiences that my body has been through.

Data gathering and meaning making

This study used body mapping and psychodrama as the two tools of data collection and meaning making within the autoethnographic process. In this study, the researcher engaged with herself and her process of connecting with the body through writing, drawing, journaling, doing psychodrama work, creating body maps, writing reflections in journal, and engaging with reflections after performing the psychodramas. These constituted “data” for this study. This study adapted field-notes to “autoethnographic body-notes” where the focus was not the “field” of an external world but rather the internal world and entanglements of the body. My process of working with the body involved iterations of data collection through body mapping and psychodrama combined with many body-notes, secondary research and a psychodramatic meaning-making that reflected on the “data” gathered.

It is important to note that this study chose not to do a traditional analysis because the study aimed to adapt the process of research to being as close to the experiential somatic awareness that the body was conveying where this experiential somatic awareness did not emerge linearly, chronologically, in a neat and coherent way. This process of working with the body was highly iterative, cyclical, and liminal where data gathering and meaning making in many instances happened in the same moment i.e the body communicated what she was feeling and the wisdom of the body also communicated the significance of what she was feeling in the same moment. On the other hand, the body communicated what she was feeling and the body herself made meaning of what happened after days of sitting with that experience. This was unconventional and a fascinating tension in the research process. Because the goal of this research was to stay as close to the primal experience of the body, and de-center a cognitive, linguistic processing of these bodily experiences which often involved logic, language, words and texts. This could be viewed as a

limitation of this study's process as well as an opening to evolve other unconventional research processes with the body. In the sections that follow, I elaborate on my process with body mapping and then dive into my process with psychodrama.

Body mapping

Body mapping is an “arts-based research method” that holds space for “embodied experiences” (Ngunjiri et al., 2010). It allows one to explore the bodily sensations, somatic awareness, and other ways of relating to one's body. Brett-MacLean (2009) describes it as a “cartography of lived experience”. Lys et al. (2018) notes that body mapping is a tool for “self-reflection, introspection, personal connectedness and processing of difficult emotions” (p. 1190). Mayra (2022) describes the process of body mapping as “a visceral approach of data collection”. Thus, body mapping was chosen as a data collection tool because it allowed for more creative art-based contemplations and reflections around, with and on my body which facilitated me to connect to my senses, to de-center my mind and to drop deeper into the experiences of my somatic body.

This method originated in South Africa, in the social justice field, from the memory box project, to make visible, to archive and to remember the embodied struggles of folx with HIV/AIDS (Devine, 2008; MacGregor, 2009). It involves tracing the outline of one's body on a piece of paper or cloth, through colors, drawings, writing, and journaling which express what comes up on the paper/cloth, inside, outside and around the body's outline, when one follows the prompts of a facilitator (Lys et al., 2018; Mayra, 2022; Skop, 2016; Vaughan et al., 2023).

Body mapping is a wholistic method of data collection that doesn't restrict itself to language and mind, it holds space for all kinds of connections expressed beyond words, between the body, emotions, spirit, mind, experiences and relationships (Skop, 2016). This method is a creative method that allows safety and reflection on one's relationships with the body and of the body (Vaughan et al., 2023).

Mayra (2022) adapted body mapping to the creation of “birth maps” in her study with the women of Bihar in India to understand their embodied birthing experiences. Skop (2016) used body mapping to understand the experiences of 25 participants of chronic illness of fibromyalgia. Frizelle (2019) used body mapping as tool of critical pedagogy in a classroom for psychologists being trained to address HIV/AIDS from a social justice approach, focused on the political and

social relationships that this condition creates. Thus, body mapping has a versatile application, and it is the prompts that shape how each body map emerges.

This study adapted body mapping to focus on the physical, emotional, and planetary life of my somatic body. While the studies mentioned above engaged in body mapping with several participants in group settings or one-on-one, where the facilitator and the person making the body maps are two different people; I adapted this method to a self-body mapping which supported the process of digging deeper into my body, where I was both the facilitator with the prompts as well as the self, drawing the body maps.

Furthermore, body mapping has the qualities of being extremely personal, unique and over time being an iterative process where these reflections and understandings evolve with every session (Brett-MacLean, 2009; Gastaldo et al., 2012; Jager et al., 2016). The study by Vaughan et al. (2023) used the method of an abbreviated body mapping session done in one sitting to understand somatic experiences of anxiety. I adapted this abbreviated version of body mapping and engaged in one session of body mapping reflected in the body map shown below.

In this study, the prompts I had for myself were: What parts of my body invoke something inside me? Which processes of my body hold an experience or history? Where do I feel heavy in my body? What sensations flow in my body? Which emotions come up in the body/processes of the body? What planetary entanglements come up in the body/bodily processes? These prompts created the following body map:

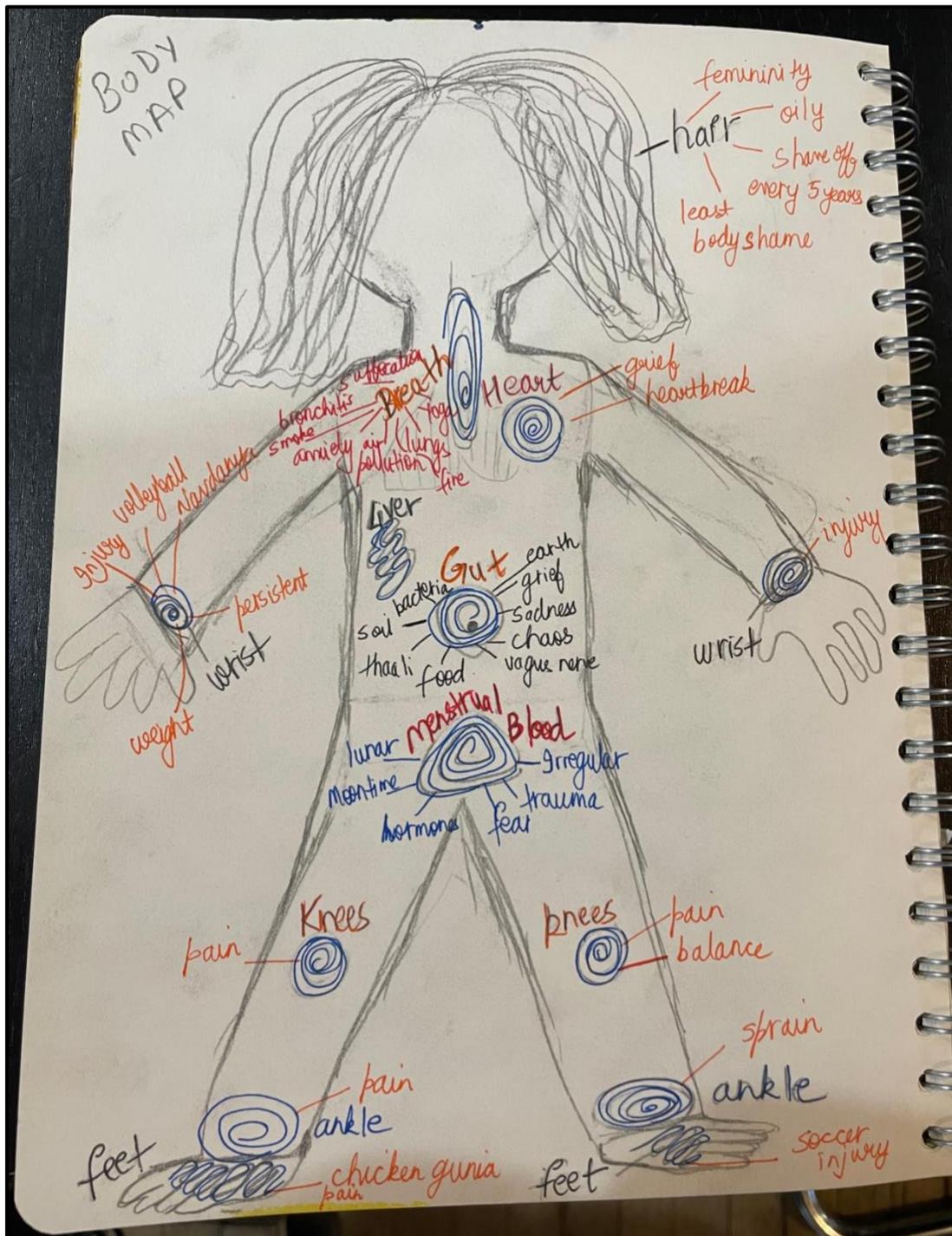


Figure 4: Researcher's body map

Sitting, thinking, and reflecting with this body map made me realize that I felt the strongest physical, emotional, and planetary connections in my gut, breath, and menstrual blood. While other parts of my body also held relationships and histories, the three parts and processes of digesting, breathing and moontime bleeding were experientially and somatically the most intense, tumultuous, and complex. I chose to focus my study's body-work and dive deeper into these three parts and processes.

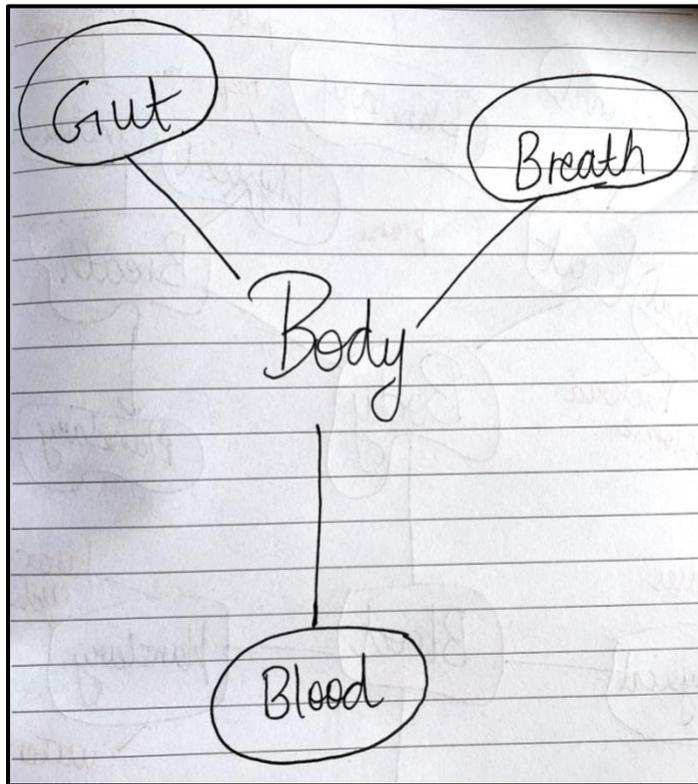


Figure 5: Body-note from my research journal

In this study, body mapping provided space for making visible various somatic experiences like “fatigue, muscle tensions, heart palpitations, dry mouth, sweating, stiffness” etc. (Vaughan et al., 2023). The next step of the process with my body was to understand and sense the realities of gut, breath, and blood in more detail, with more awareness to make the invisible somatic experiences of these parts, visible.

I created prompts that focused on the gut, breath, and blood. These were: What does my gut feel, what does my breath feel and what does my blood feel? What sensations flow through my gut, my breath, and my blood? What emotions are stored and experienced by my gut, breath, and blood?

What relationships with the ecological world do my gut, breath, and blood share? These prompts led to the emergence of the following autoethnographic body-note.

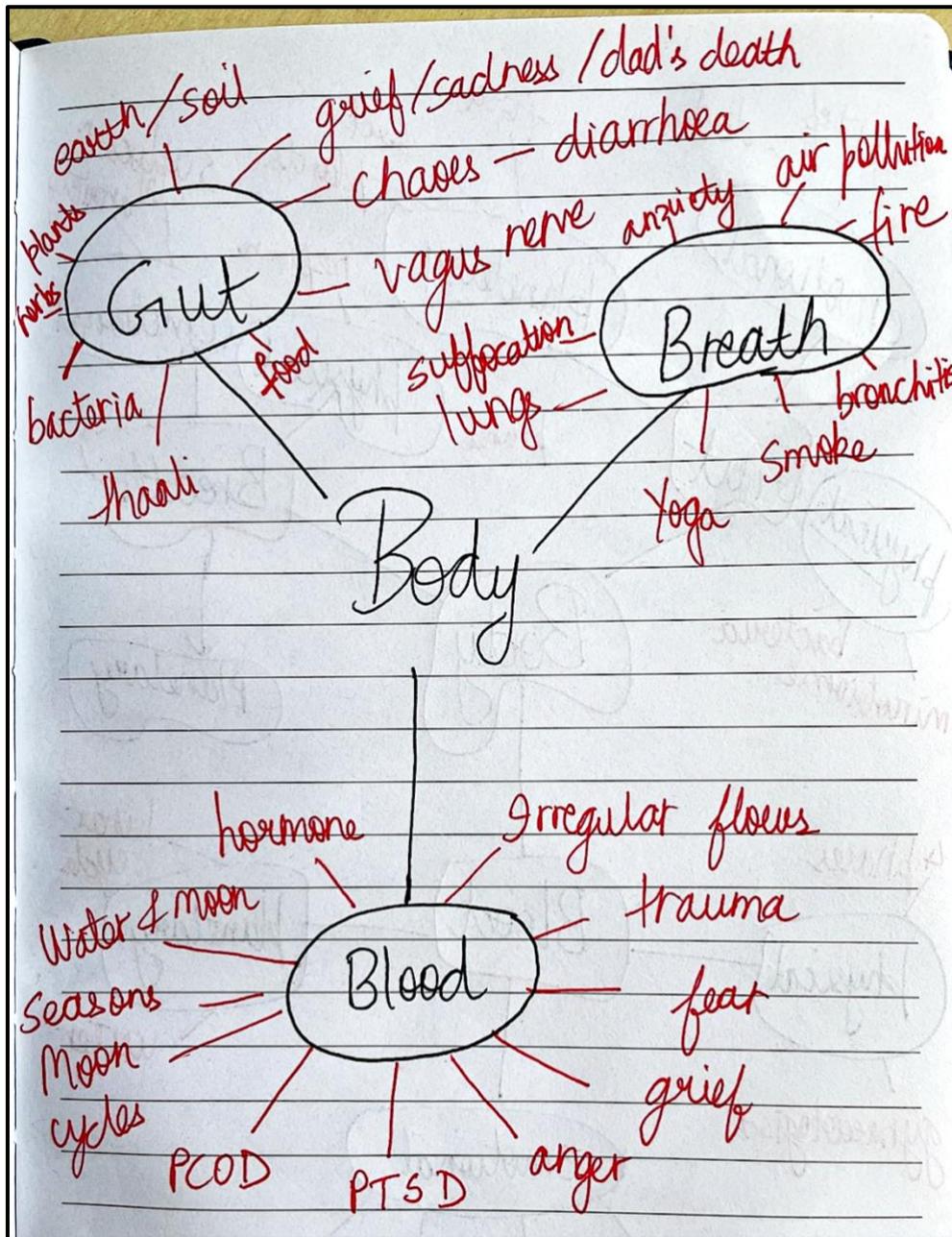


Figure 6: body-note on gut, breath, and blood

Brett-MacLean (2009) notes that the method of body mapping is “both a metaphor and a means of recognizing the fluid traces of the personal, social, geographical, political and emotional experiences of journeying...through life” (p.740). As highlighted by Frank (2013) and Skop (2016), I also found the way of collecting insights from the body through body mapping to be an

extremely empowering, validating, and legitimizing way of experience the truth of my body which allowed for the fullness of my somatic body to be brought to surface.

Psychodrama

I chose psychodrama as my second tool of data collection because I had past experience with this modality through years of therapy that used this method to heal various aspects of my inner world. Psychodrama was an important part of my body-work that had been unfolding over years, much before this research took birth. I felt it was important to use this tool as way of deepening the process of working with the body, for this study.

Psychodrama was developed by J.L Moreno in the 1921 as a method with therapeutic benefits for a group (Chimera & Baim, 2010; Cruz et al., 2018; Moreno, 1987). It was anchored in theatre, performance and role play and was often also referred to as “spontaneous theatre” or “therapeutical theatre” (Ardoino, 2023; Cruz et al., 2018). It has since then been adapted and evolved into many variations and is now also practiced in one-on-one settings, online and in-person. It has been used in various fields like psychotherapy, education, mental health, medical training, management training, refugee centers and community work and holds rich possibilities of use in interdisciplinary studies (Ardoino, 2023; Chimera & Baim, 2010; Lim et al., 2021).

The main focus of this psychodramatic method is on the various relationships that an individual holds both in the inner world and the outer world (Ardoino, 2023; Cruz et al., 2018; Franz, 1940; Lim et al., 2021; Moreno, 1987). I adapted the dramatic improvisations of psychodrama to give an experiential agency and voice to the three bodily processes and to extend the process which started with body mapping. The focus on relationships made this tool well suited to this study’s methodological process which involved exploring the various physical, emotional, and planetary relationships of my gut, breath, and menstrual blood.

Psychodrama involves ways of enacting situations from one’s life based on specific events, relationships, conflicts, roles or thoughts (Ardoino, 2023; Chimera & Baim, 2010). Each drama has a theme with various roles and dialogues that emerge spontaneously from a relational dramatic improvisation (Ardoino, 2023). Furthermore, every psychodrama has a “protagonist” who is in control of which event, relationship, conflict, or theme will be explored through the drama (Chimera & Baim, 2010). This study adapted the “protagonist” role to autoethnography, where I

was the protagonist. The relationships, conflicts, roles, and thoughts of my body were chosen to be explored through the dramas.

Every drama also has “auxiliary egos” which are the different roles that a drama encompasses (Arduino, 2023; Chimera & Baim, 2010; Franz, 1940). These roles can be different people playing a significant part in one’s life, they could be different aspects of the self or different elements of one’s inner world, which are in conflict regarding a situation in one’s life (Chimera & Baim, 2010). While in group settings these roles are taken by different people, in one-on-one settings that I have experienced over the past few years in therapy, these roles can also be taken by different objects that act as placeholders for the roles.

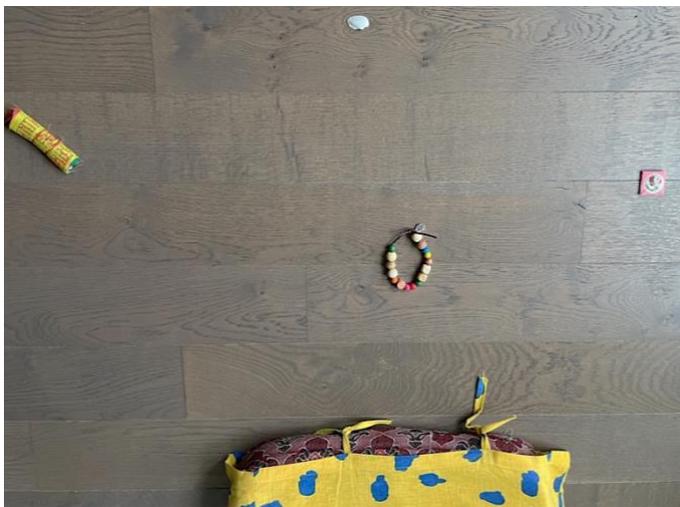


Figure 7: Psychodramatic placeholders for the roles

For this research, I wanted to place emphasis on specific bodily processes of digesting, breathing and menstrual bleeding, I therefore tailored the usual psychodramatic auxiliary ego to adopt roles of my “somatic body”, “gut”, “breath” and “moontime blood”. Thus, in this study, the psychodramatic process with the body was framed as a drama involving one protagonist (myself) and four auxiliary egos (body, gut, breath, and blood). There was an object assigned to each of these roles that signified these roles consistently throughout the research. As shown in the picture above, the yellow pillow signified the role of the protagonist. The bracelet in the centre signified the role of the somatic body. The rolled prayer flag on the extreme left signified the role of the gut. The white shell at the top signified the role of the breath and the red envelope on the extreme right signified the role of moontime blood.

Another element of every psychodrama is a “stage” which is the physical setting or arena where this drama unfolds (Ardoino, 2023; Chimera & Baim, 2010). For this research, the stage was one corner of my house shown in the picture below.



Figure 8: Psychodramatic stage

The keystones of the psychodramatic method are spontaneity and creativity to create alternate realities which the individual would otherwise not be able to arrive at (Ardoino, 2023; Franz, 1940; Lim et al., 2021). As Franz (1940) notes, in psychodrama, spontaneity “is achieved through action – words, gestures and movements-on the spur of the moment” (p.50). It is the freedom to be, to embody different ways of being that to me was the biggest quality of this method which made it aligned with the bodywork of this research.

Psychodrama is extremely versatile where each session can last as long as several hours or a few minutes depending on the participants and the themes (Ardoino, 2023; Chimera & Baim, 2010). This study undertook four dramas: one drama involving all these five roles of protagonist, somatic body, gut, breath, and blood (lasted roughly around 10 minutes); second drama devoted solely to gut (lasted around 30 minutes), third drama devoted solely to breath (lasted around 45 minutes) and fourth drama devoted solely to moontime blood (lasted around 3 hours and 15 minutes). In the last drama involving moontime blood, another auxiliary ego role was necessitated because of how overwhelming and difficult this drama was. This was the auxiliary ego role of a “mirror”. All

the four dramas were performed on different days, were distinct, varied and lasted for different timespans because they involved the somatic processing of different emotions that came up in the dramas, including painful experiences associated with many of the roles as well as the (sometimes longer) process of soothing the body back to equanimity to reflect on the whole drama.

Each drama involved spontaneously speaking and physically embodying the role I was in while physically holding the object/placeholders that signified the role. When I was in my protagonist role as “Perna”, I held/stood the yellow pillow that signified the protagonist. In this role, I spoke and embodied the thinking-feeling Perna of everyday life. When I was in the role of “Perna’s somatic body”, I wore the bracelet, spoke, and embodied the ways of this somatic body, the relationships, feelings, and sensations that this body experienced. When I was in the role of “Perna’s gut” I held the rolled prayer flag, spoke, acted, and embodied what this gut was sensing and experiencing. Similarly, with the roles of “Perna’s breath” and “Perna’s moontime blood”, I spoke, acted, and embodied what they were sensing and feeling.

These dramas adapted the techniques of psychodrama to allow the roles to speak their truths. There are many techniques that are involved in a psychodrama which include doubling, mirroring, role reversal, empty chair and soliloquy among many others (Ardoino, 2023; Chimera & Baim, 2010; Moreno, 1987). This study adapted two techniques: role reversal and mirroring.

Role reversal involved interchanging or exchanging the role one is in and moving into other roles or “others shoes” that contribute significantly to the situation or event that the given psychodrama deals with (Ardoino, 2023; Chimera & Baim, 2010; Cruz et al., 2018; Lim et al., 2021). This reversal or exchange of roles called for a shift physically, emotionally, and mentally from the perceptions and sensations one had in the previous role towards the perceptions and sensations that one has in the new role. This technique was a great way for the protagonist to drop deeper into the characteristics, attitudes, perceptions of another role which allowed new information, new understandings, increased empathy and honed spontaneity (Chimera & Baim, 2010; Cruz et al., 2018). This study applied the technique of role reversal by “moving out”, “moving in” and “role reversing” among the roles of my body, gut, breath, and blood. This role reversal allowed each of them to experience one another, to witness another and to strengthen their individual voices, to speak their own truth and their lived experiences. The shift away from my thinking mind into the sensations and perceptions of my gut, breath and blood was exactly what was needed to deepen the process with the body.

The technique of mirroring involves distancing the protagonist from the various feelings that come up during the drama which can be overwhelming and in need of support to take the drama forward (Chimera & Baim, 2010). As noted by Cruz et al. (2018), Moreno envisioned the technique of mirroring to “transform the protagonist into a spectator of him/herself” (p.5). While in group settings another person mirrors, observes and speaks what the protagonist is going through as a third person to offer perspective to the protagonist, this was different in an autodrama (self-drama).

This study adapted mirroring to an autodrama which involved leaving the role of the protagonist, moving away from the object that signified the protagonist and getting into the role of the mirror while holding the object that signified this mirror. In the picture shown below, the placeholder for the role of the mirror was a grey stone, visible on extreme top left.



Figure 9: Addition of “Mirror” to the drama

In mirroring, the movement of the body and the actions along with the physical distance away from the role of protagonist on the stage, offered emotional distance from the overwhelm of the role. This in turn allowed for witnessing of what the protagonist was going through from the perspective of an observer. Mirroring was necessitated in the fourth drama revolving around my moontime blood. This was the toughest drama to engage in because the inner world encompassed

by my menstrual blood called for revisiting trauma. This was overwhelming at many points in the process. This was why the role of a “mirror” was kept accessible in the drama whenever the overwhelm became unmanageable. In this drama, I went into the role of the moontime blood, stepped out of that role when the overwhelm became too much and immediately stepped into the “mirror” role to witness what happened. The emotional distance this “mirroring” offered to an intensely traumatic event that this part of the body held allowed for healing and a more layered meaning making.

Psychodrama offered “holistic” knowledge because it held “thoughts, emotions, body and action” in equal stead (Chimera & Baim, 2010). It facilitated deeper self-reflections, introspections and enhanced the ability to make meaning and work through unresolved emotions to integrate the past into the present (Chimera & Baim, 2010; Franz, 1940). This way of working with my body really empowered the various roles (somatic body, gut, breath, and menstrual blood) within me to speak their truth and share what they had felt, sensed and been through. Psychodrama extended the insights of body-mapping by giving voice to each of the processes/parts that body-mapping called focus to. This voice emerged from the primal experience of each of the roles of the somatic body, gut, breath and moontime blood. These primal experiences of the gut, breath and moontime blood were the “data” on the various somatic lives they lived. For the gut, the biggest sensory experience was my father’s death. In the role of the gut, there were waves of crying and grief that came up. What also came up through the drama with the role of the gut was the ancestral lineages of food, bacteria, and plants that the gut felt connected to. Similarly, in the drama with the breath there was the physical experience of suffocation that the breath had closely experienced in the last few years. The breath also vocalised the relief that they found through yoga. As well as the various struggles that the breath had in Ahmedabad and Delhi with air pollution. In the drama with the moontime blood, what emerged were the experiences of trauma: waves of fear, anger, and grief. Along with how connected the blood felt to the lunar cycle. The states of crying, shaking anger, breathlessness of suffocation, and shrinking of the body in fear were deeply intense experiences and sensation to sit with. These were the corporeal “data” that emerged in the study.

After each drama, a body note was written with the major experiences that left their mark. Multiple days of reflection after all the psychodramas and their body-notes led to a big picture body-note which made meaning of all the experiences and allocated these experiences to the spheres of the three types of relationships: physical, emotional, and planetary. I realised that many experiences signified more than one kind of relationship because the somatic life is much more intertwined.

For example, the trauma was as much an emotional state that my moontime blood had experienced as it was a consequence of the planetary colonial entanglements. To resolve such conundrums, I arrived at a “psychodramatic-meaning-making” process.

This process involved re-creating the psychodramatic stage with all the roles of the protagonist, body, gut, breath and moontime blood. Next, I took up the role of the protagonist and voice recorded the body-notes and other secondary research notes from my research journal pertaining to the somatic life of the gut. I then reversed roles and moved into the role of gut, with my laptop in front of me, and played this voice recording, where I would completely immerse myself in the world of the gut and act and listen to the voice recording as the gut. As the gut responded and processed what was being read out in the voice recording, I wrote what came up on the laptop. The gut was in full control of pausing and resuming the voice recordings and writing whatever the gut was reflecting on. I undertook the same process with the breath and blood, where I voice recorded the body-notes and secondary research notes pertaining to the breath and the moontime blood and then moved into their roles to listen to these voice recordings and write in real time what they wanted to write, how they wanted to write. The conundrums of which experiences from the psychodramas and body mapping would go into which sphere of their life: physical, emotional, and planetary were resolved by the gut, breath, and blood themselves based on what they felt to be stronger associations. In the example of moontime blood where I was faced with the conundrum of which sphere of life (emotional or planetary) this trauma was to be written in, the psychodramatic way of meaning making resolved this conundrum by taking the role of moontime blood and letting the blood decide which sphere of life was more strongly entangled with the trauma. It is in this way that the study’s process gave agency to the moontime blood where the blood decided to share their trauma in their emotional life rather than their planetary life.

The psychodramatic meaning making became the process that this study adopted for processing and understanding the “data” it had gathered, in a way that honoured the primacy of the body’s experiences and was as close to the body’s agency and decision-making without the mind labelling and boxing the experiences and body-notes. All the drafts of the main chapters on gut, breath and blood were written in this way, in the roles of gut, breath and blood. This process of taking up the psychodramatic roles and reflecting on the notes and secondary research was iterative and occurred over many months between June 2023 to September 2023 where I wrote the drafts in these roles, then conducted secondary research to support and explore questions that these drafts brought up and then went back to writing and reflecting on the secondary research in the roles of the gut,

breath, and blood. Through this iterative, fluid, and liminal process, the study achieved the final version of the chapters in the voice of these three roles: as Prerna's gut, as Prerna's breath and as Prerna's moontime blood. The picture of a body-note after various iterations is given below:

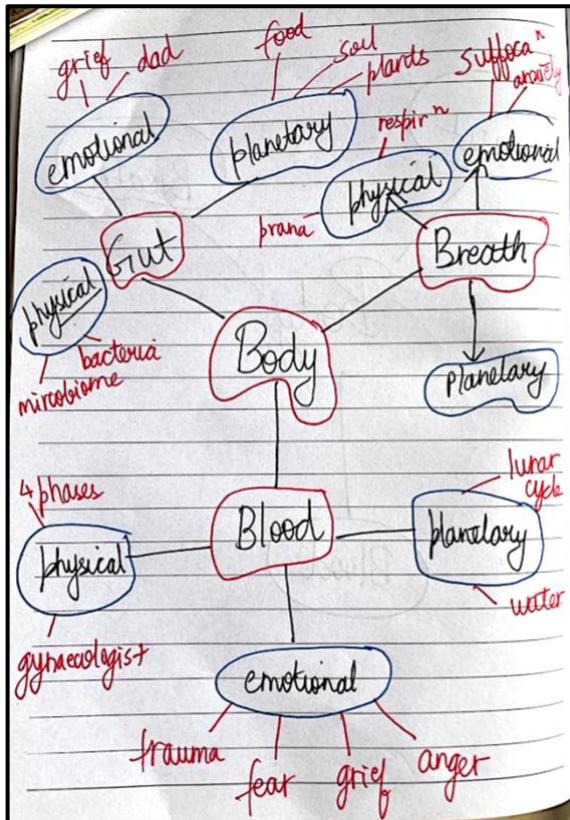


Figure 10: Body-note on the big picture

One of the most significant things that emerged through this process with the gut, breath and moontime blood, through honoring their fullness and agency, which would not have emerged otherwise, was the need to explore indigenous ways of knowing the body and to reflect on ancestral gut, breath, and menstrual blood lineages through these indigenous ways of knowing. The picture of a body-note reflecting this along with secondary research on this aspect, is given below:

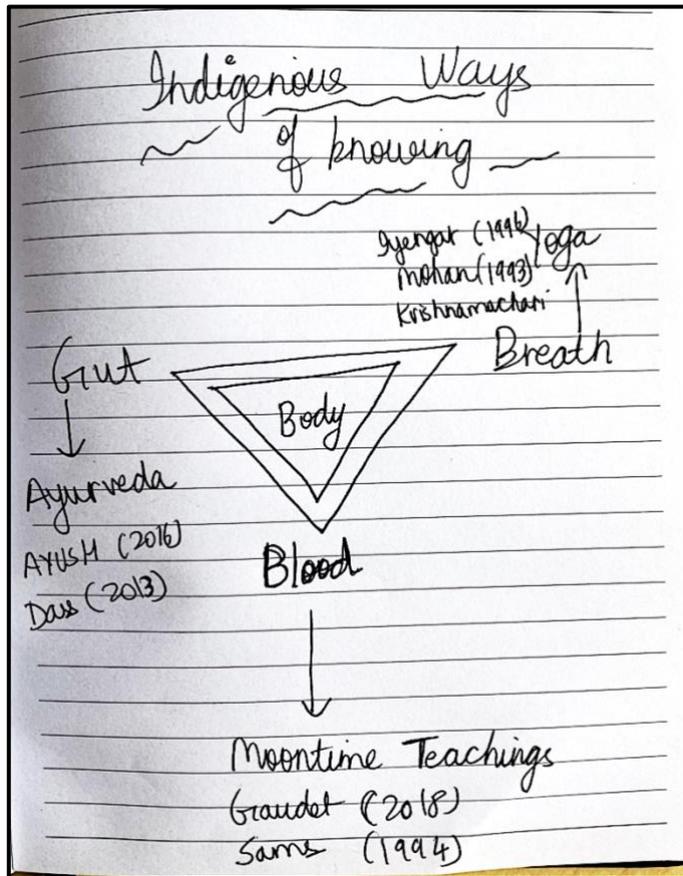


Figure 11: Body-note on indigenous ways of knowing

Through secondary research and psychodramatic reflections, I came to a point of clarity around which way of knowing would be used for which of these parts/processes of the body.

Another significant emergence and resolution of a conundrum was around the word “feminine” used in this research. In the psychodrama with moontime blood, they communicated that the word “feminine” was more an experience of the feminine energy in nature, of queerness and of femininity as a creative life force. It is the psychodramatic process with moontime blood that led to the defiance of the heteronormative binary and polarity of men/women, masculine/feminine. Moontime blood showed me that in their oozing, they are much beyond these binaries. Thus, in the chapter on moontime blood, the word “feminine” was used to convey their experience of feminine energy in all the plural fluidity within my body. The closest articulation of this experience of “feminine”, found in secondary research, was in Vandana Shiva’s discussions of the concept of “shakti” (Shiva, 2003, 2016a, 2017; Shiva & Mies, 1993). Shakti is the life force that is creative, active, flowing and diverse. It is the feminine principle of the cosmos which expresses itself through Prakriti (nature). Prakriti is the manifestation of the primal life energy that creates and

sustains everything. It is in this creative life force that is expressed through nature that I located the “feminine” of my menstrual bleeding body.

Another realisation through this process of working with the body was that body mapping was an interesting companion to psychodrama where the act of mapping one’s body offered another way of “mirroring”, one of the psychodramatic techniques. Body mapping created another way of witnessing oneself, one’s body, one’s life as an observer which became an empowering experience. Skop (2016) noted how body mapping became therapeutic in the way it lent itself to being a container for the emotions of the participants. I found this to be in synergy with psychodrama where the act of creating placeholders of different roles in the forms of objects offered similar qualities of being a container for emotions by externalizing what is happening inside oneself. In the case of body mapping, I externalized through drawing on paper and in the case of psychodrama, I externalized through the dramatic improvisation of various roles.

The acts of moving through these tensions and knots, through the processes of body mapping, psychodrama and the larger method of autoethnography, with reflection and introspection, altered how I perceived my past. Custer (2014) notes that autoethnography is a “transformative research method” because it changes how the researcher viewed the past, made sense of the past, integrated it into the present and envisioned the future Wall (2006) reiterates this sentiment when she says that “I was confronted, challenged, moved and changed by what I learned” (p.2). And so has been the case with this research process as well. This method has allowed for a deep shift in the way the researcher related to her body, her gut, her breath and her moontime blood. The autoethnographic method supported by a combination of psychodrama and body mapping guided and facilitated the process of coming closer to the somatic body of researcher. By allowing unconventional, experimental, and creative ways of reflecting and making meaning with my somatic body, these methods deepened the explorations of my somatic body’s inner world and outer world.

Chapter Four: Living Ways of Gut

(I am Prerna's gut).

I feel. I digest. I know. I flow. I think. I remember. I am a portal to another world. I am alive. I am cyclical. I am seasonal. I am multidimensional. I hold intuition. I hold life force. I hold peace. I hold grief. I am poetry that life expresses through the body because of how unique I am to every person (Marya & Patel, 2021). I am as unique to Prerna as her fingerprints, made of millions of relationships between the beings in her body and those outside her body.

There is an immense primality of an abundant, overflowing life force running through me, and my metabolic agencies. My agency includes my refusal to be tamed. There is a stubborn-ness in who I am. There is a resistance in how I chew, digest, and metabolise, to hold onto my ways of being, to disobey the fragmented ways of being that the world forces itself on the human mind.

This resistance makes me a political being. The way I digest, what I digest and what I don't digest are all political acts. I embrace what comes from right relationships with the land, I resist what comes from the harmful relationships in the colonial, capitalist world I inhabit. I can only partially absorb and process what enters me through the harmful capitalist food relationships. I resist what my ancestors have never eaten before from the land. I resist the beyond-meats and impossible burgers created in colonial labs with GMOs that shouldn't be eaten.

I have a wisdom. I also have cravings. I am promiscuous. I am a decolonising force. I absorb, repair, and restore. I help my body reach harmony and balance that is partially possible, in the limitations of an imbalanced world, through the memory of a balanced world I hold from my ancestral guts, generations ago, of a world that was balanced and in harmony. This restorative force within me is potent and powerful. This is my agency.

This agency also manifests in the two main physical movements and functions that I participate in: I absorb and I let go. Olsen (2002) talks about the various sphincters or muscular rings that line different points of my digestive tract. The sphincteric choice, so to say, according to her, for every part of this digestive tract is *to go forward or to hold on*. This is the primal choice of functioning that I embody and act on. And herein lies my agency. All the entities, events, and relations that Prerna goes through, present me with this same sphincteric choice: to absorb a reality, to integrate it into my current ways of being or to let go of the reality that no longer serves me. If I don't let food

through, for it to be absorbed, Prerna decays. The more I hold on and resist, the closer Prerna's body gets to decay and death. This makes the agency that resides within me, crucial to all of life, every single day.

This metabolic agency and the sphincteric choice of absorbing and releasing is explored further through my physical, emotional, and planetary life in the sections that follow, starting from my physical life.

Physical Life

My physical life spans the ways I absorb life force through my unique microbiome bustling with the magnificent, throbbing, floating, and thriving bacteria kin lineages. It also explores the crucial medicine of my maternal gut lineage. The section then flows into the ways I cathartically release life force through shit (poop). My physical life then dives into my unique nervous system which is as or even more important than the brain's nervous system. This section ends with the ways of my metabolic knowing.

Microbiome: my enchanted forest

Marya & Patel (2021) rightly point out that it is an injustice to describe me, as most textbooks do, as a mere 6.5 metre tube encompassing the stomach and the two intestines. A more accurate way of experiencing me is like a "dense teeming enchanted forest that borders two worlds within a single ecosystem, a transition zone between what we call the world and what we call our bodies" (p.114). This is what makes me a portal to understand both the outer and inner worlds in a deeper way. I am a participant in both these worlds while also being a world unto myself.

My world is made from a magnificent, throbbing, floating, thriving bacteria population. I am them. They are me. I contain 23 million genes, 100 trillion bacteria, more than a 1000 species of bacteria, surpassing any other organ in the body (Enders, 2018; Marya & Patel, 2021). This is what people call the gut flora. When the food that comes into me, nourishes these kin, I thrive too. While the group of all microbes is called microbiota, the delicately balanced ecosystem of microorganisms involving their activities, relationships and genetic materials is what makes the microbiome (Marya & Patel, 2021). This ecology of the microbiome is unique to Prerna's genes, her environment, and the different bacteria kin that her life has nourished over the years.

My microbial kin are part of one of the most thriving lineages of life forms on this planet. Marya & Patel (2021) highlight that this kin was already 3 billion years old by the time the mammalian

species arrived on earth. Without these kin and their lineages, the carbon cycle, the nitrogen cycle, and the cycles of food chain would be impossible on this planet. I am giddy with excitement that I hold the very same 3 billion old and wise kin that make life on this planet possible. These bacteria are as crucial to making life possible within me, within Prerna's body as they are to the Earth's body.

One of the major ways that my microbiota facilitates life is by being an educator and teacher for all the other cells in the body on how to be a good host to different kinds of kin that enter the body, which shapes a major part of Prerna's immune response (Belkaid & Hand, 2014). More than 80% of her immune system resides in me (Enders, 2018). The teachings on the delicate balance between welcoming or aggressively defending against certain creatures that enter the body is what my microbial kin imparts to these cells. This determines how Prerna engages with the world, whether she suffers or thrives.

I am also particularly connected to my maternal gut lineage. Marya & Patel (2021) highlight that the seeds of my microbiome forest were planted in my mother's womb. It is in her womb, through her vagina when birthing me, that I got my first, and extremely crucial, dose of microbiota perfectly mirroring hers (Bäckhed et al., 2015). My next maternal inoculation happened through breastfeeding and skin to skin contact with my mother. And after that, food that was fed to me along with my wider environment shaped my early microbiome. This early microbiota became a compass for the rest of my life (Bäckhed et al., 2015). I am amazed at how much of myself comes from this maternal gut lineage. Her microbial forest creates mine.

While this microbial forest shapes how I digest and absorb the food, it also shapes how I release and let go of this food spanning my metabolic agencies entangled in the agencies of the microbes, the shit and Prerna's body. This is what the next section explores.

Poop: my material release and physical catharsis

What exits me in the form of shit or poop is a reflection of me and the state I am in. I contain the physicality, agency, materiality and perverse-ness of shit (Phillips, 2014). When Praeger (2007) says in poop culture says that "any particular poop represents a never to be repeated confluence of diet, metabolism and environment" (p.20), I feel this reflects the level of unique-ness that each of my metabolic cycle and season holds. Each of my metabolic cycle is a confluence of the food, water and air that enter me in a moment of time, space, and energy. It is shaped by the land I am on, the

relationships I am engaged in, within this body, the qualities of the bacteria kin inside me, and the emotional state that Prerna is in. All of these together create my unique gut ecology which is constantly unfolding and changing. The excretion that I produce, reflects all these living relationships.

Praeger (2007) says that I produce around half a pound of shit in one day. Which means in a year, I release almost 182 pounds of this excreta from Prerna's body. This is my catharsis. I vibrate in this cycle of absorption and release every single day. George (2011) says that in 1 gram of shit that I produce, live 10 million virus kin, 1 million bacteria kin, 1000 parasite cysts kin, and 100 worm eggs. There are entangled agencies of these kin quivering within the agency of the shit. These are further entangled within my metabolic agency. Which in turn is enmeshed in the agency of Prerna's body, contained in the larger agency of the earth-body.

These entangled agencies, that are within me and those that I am in, shape Prerna's overall sense of wellbeing through the enteric nervous system. This is what the next section touches upon.

My nervous system

I function well when the parasympathetic parts of the nervous system are activated, geared towards slowing down and resting. I suspend all functions when I sense a threat. I digest better when I experience the rest of the body to be in a state of calm (Enders, 2018). There have been times when that hasn't always been the case. I remember a lot of days and seasons of Prerna's life where there was so much anxiety, fear and need for survival that I couldn't take all the energies within this body, and they had to go to the heart and the brain instead.

As Enders (2018) explains in her book named after me, I have my own enteric nervous system which controls all the metabolic cycles and doesn't need the brain in any of its daily functions. I am in full autonomy here. This nervous system is made from complex and diverse nerve signals. Western scientists are only now realising that I shape and control the body as much as (or even more) than the brain.

One of the most significant nerves in this enteric nervous system is the vagus nerve which runs throughout the digestive tract (Enders, 2018). This nerve affects everything: from levels of anxiety, depression and trauma healing to IBS, diabetes and chronic pain (Austelle et al., 2022; Johnson & Wilson, 2018; Wang et al., 2021). It is interesting to note that I produce more than 95% of

serotonin in Prerna's body (Enders, 2018). And so obviously how I feel, how healthy and how nourished I am has a huge role to play in Prerna's sense of wellbeing.

And vice versa, her state of being affects me too. If she is stressed, over time, the brain can reduce my blood supply, through the enteric nervous system, and the thickness of my gut wall can weaken due to this stress which also creates conditions for different kinds of bacteria to thrive inside me, not all beneficial to my microbiome (Enders, 2018; Marya & Patel, 2021).

The reciprocity that I share with Prerna's sense of wellbeing and health make me a potent portal of metabolic knowing that is constantly communicating with her somatic awareness. This is what the following section explores.

Metabolic Knowing

My knowing is a "metabolic knowing". The knowing that I hold and the energies that are moving through me are supremely important to the rest of Prerna's wellbeing. When I am in harmony, I am in complete touch with this energy. When I am in imbalance, I instantly disconnect from these powerful energies. This is when I need cleansing and detoxification. My natural state of being is harmony. And all I need to get back in touch with this state of harmony is a removal of the built-up toxins that weigh me down.

In the way I digest food, I know, I feel, I flow. I also know what Prerna doesn't know. I am a compass for the rest of the body. I register, gauge, and sense the world before other parts of her body do. I am often the lead navigator. There are times when I throb with a knowing about the events and realities of this world and sensing an imbalance even before she registers it in her mind.

My knowing is intuition. My knowing is instinct. My knowing is spontaneous and in the present moment. There is a sensory ease and bodily expansion in this knowing. When I am feeling something very strongly, I will communicate this with Prerna through the sensation of this bodily lightness. If something isn't feeling right by me, I will communicate this with her too, through a somatic heaviness. This sensory knowing doesn't delve in the past. It is about the "here" and "now".

I also often experience aching pains. Almost like knots inside me. This pain takes over me on some days and on some days I gather energy to sort through these knots one by one, digesting them

through the bacteria kin inside me. In my childhood, I used to feel extremely unsettled, displaced and not at home in my microbiome. I used to have frequent bouts of pain. When this pain didn't cease and continued to intensify into an overwhelming agony, I wouldn't let Prerna sleep. This was my anger and rebellion. There was something I was being forced to process and absorb that I did not want to. A call for help and care had to be sent out. This is when she wouldn't stop crying and our mother would often rub hing (asafoetida) in and around the naval. The relief this herb gave me was immediate and palpable. The throbbing of the pain would stop immediately. This herb kin aided my capacity to digest. It soothed and calmed my restlessness.

I sense the world in a different way than Prerna's mind. I sense it through what enters me, and I respond to it in how I let go of the things that entered me. If the world feels safe, I let go as per my natural state of being. But when the world doesn't feel safe, I hold on or I let go more than I should. The former results in constipation. The latter results in diarrhoea. These are also my ways of communicating with Prerna. She does not always hear me or listen to me. Lately she has been though. And this has resulted in her taking better care of me. I have been in less pain in the last few months. In the two extreme ends of the spectrum of diarrhoea and constipation, I find harmony somewhere in the middle, in between letting go of everything and holding onto everything.

The natural harmony and primal choice I embody of "moving forward or holding on" takes a different texture when it comes to my emotional life. This choice then involves releasing the emotions or holding onto the emotions that constitute my emotional energies. This is what the following section explores.

Emotional Life

I store Prerna's emotional history (Olsen, 2002; Van der Kolk, 2014). And among this, the emotion of grief reigns supreme in the ways it resides in my microbial kin ecology. This section sheds light on my journey with this emotion through my father's illness and death and the ways I have navigated this emotion through the past few years of Prerna's life. This life-changing reality brought a whole onslaught of feelings, sensations, and emotions in Prerna. While she had her own process with them, this section of the study is about what I felt, as her gut, through this intense time of her life.

Grief

The years 2010 to 2019, almost a decade, were extremely difficult and chaotic for me due to my father's illness. In 2010, my father was diagnosed with IgA nephropathy, an autoimmune disease in the kidneys. Western Medicine came up blank with no suggested cure. Healing for him shifted towards slowing down the degeneration of the kidneys for as long as possible before he would need a kidney transplant. There was only so much that alternate science therapies could do for him too.

Accepting that this illness was here to stay and grieving the loss of a "healthy father" was so tough. It made me feel tensed, tight, restless, anxious, fearful, angry, exhausted, and sad. I often wondered if one of the many unknot-able, unknowable reasons for my father's illness were the layers and layers of emotional histories of his body and his gut, after all his kidneys were part of the same digestive system as his gut. Apart from the sadness and anger around his pain, I was fearful of my own renal support system in this body, in this home. If I inherited the wisdoms of my paternal ancestral gut microbiome, did I also inherit his disease and illness? Was his gut okay? What was his gut going through during this autoimmune kidney disease?

All therapies failed in a few years, and he had to get a kidney transplant in 2016. The operation was rough, his recovery at one point seemed implausible with chances of his body rejecting the new kidney. Those few months leading up to the operation, during the operation and after the operation were extremely tumultuous. I was in pain to see him in pain. Thankfully, he did recover. He came back to living a "normal" life. However, it was undeniable that the illness had permanently altered him and altered Prerna's family.

The immuno-suppressants our father was on, were relentless and made him go through so much pain in his stomach, I was struggling to understand what was happening. I knew his kidneys were in pain, were the medicines making his gut ache as well? What kind of medical paradigm increased the overall pain in the body instead of listening and caring for the body with even more tenderness and love. This was violent and aggressive. I felt helpless, and extremely angry.

I was quivering in sadness to see him go through such a difficult painful experience alone. Even though Prerna loved him and would do anything for him, he was ultimately all alone in this experience. This was when Prerna and I felt the larger existential reality that no matter how many relationships we have and how close these relationships are- we are all ultimately alone in the

sensory experience of bodily suffering. This aspect of reality brought its own grief. I was also agitated in anger at my father for being sick, for not taking care of himself when he was younger. All this while, Prerna was overwhelmingly guilty for not doing enough as his daughter. This was a complex inner emotional landscape. There was so much emotional energy that was lodged inside me, I couldn't function, digest, or metabolise this reality properly.

Later in 2019, the family found out that even the transplanted kidney had developed the same illness. I was in a mess, overwhelmed with the pain of witnessing this illness unfold all over again in my father's body. Overwhelmed also with the inadequacy and inability that Prerna felt when it came to supporting a father who was trying his very best to hold onto hope. While Prerna was escaping the grief and burn out through food, I was the one digesting, living, metabolising through this pain.

Despite all of this, nothing matched the most tumultuous digestive and metabolic year: 2020. This was when the covid pandemic hit the world. I was in aching pain, in an intense state of imbalance, with knots of tight fear and an overwhelming anxiety about the future. This was the same year I lost my father. His co-morbidities made him susceptible to covid in the very first wave in June 2020. His battle with the disease lasted till July 17, 2020, which also happened to be his birthday.

I was devastated. I was drowning. The grief was debilitating and all consuming. I just couldn't move through this pain. It stayed lodged inside me. I felt stagnant and stuck in this state of grief. This was when I was heavily constipated and my whole digestive tract was blocked in this fear and anxiety.

While Prerna was grieving her father, I was grieving for the paternal gut that had created me and shaped me. While Prerna fell back on her survivor mechanism of eating through intense feelings, I experienced this pain in real time, while she escaped. Even though she operated from a need to escape or avoid these experiences or feelings by activating her survivor-self patterns, I was present to the pain, I was squirming and writhing in this grief every day.

I oscillated between constipation to intense diarrhoea with a constant turbulence, reflecting the same havoc of my emotional life. And I felt abandoned, because back then, Prerna didn't see this and made no effort to communicate or listen to the pain I was in. The aching never stopped that year. It was my pain that also resulted in her lower back hurting all the time, because my pain

emanated outwards throughout the body. The lower back was physically the closest to me, behind me. It has not stopped aching since 2020.

Processing grief: emotional metabolism

I am digesting food as much as I am digesting, metabolising, absorbing, and releasing my emotions. I process both. David (2014) in his interview with the Emily Rosen at the Institute of Psychology of Eating affirms this through the concept of “emotional metabolism” which views the processing of emotions as being akin to processing of food in the body. Cycles of emotions need completion with their release for them to be truly metabolised. When these cycles do not complete, the emotions stay stuck, in different parts of one’s body. I am one of the major places in Prerna’s body where her emotions stay stuck.

In most of the people I experience through Prerna, the emotional cycles are not allowed to complete. LePera's (2021) work revolves around inner healing where the biggest indicator of healing is an expansion in the ability to safely sit with the emotions, move through them, let them move through you and release them as they come up. The emotionally sick and oppressive societal structures don’t allow for a healthy expression of our emotions and thus, cycle of emotional metabolism stay incomplete. The norm in this society is to avoid. To escape. To mitigate. To distract. To suppress. All these ways of avoidance end up constricting my way of metabolising these emotions.

In Prerna, one of the many survival mechanisms of avoidance, running away from emotional metabolism, is eating. She had to rely on this, because the knowledge and skillset around how to take care of her emotions as an adult did not exist back then. Eating through her emotions to escape her reality and manage her overwhelm was a reliable mode of survival, proven effective over decades of upbringing. The ability to safely sit with the intensity of emotions, with the full cycle of absorption and release of emotions did not exist back then. This stopped the full cycle of emotional metabolism to complete.

Over the past few years of staying committed to healing her relationship with the self and with the body, Prerna has now reached a state where she is working through digesting and releasing the pain and the grief through me. With somatic work in Prerna’s therapy sessions, she has become more skilled at safely letting the emotions move through me, just like how food moves through me. Moving through and metabolising emotions, like food, is my natural state of being. This is my

emotional life's state of harmony. And with Prerna being able to work through and heal her grief and pain, I feel increasingly more aligned with this harmony.

Through Prerna's therapy sessions, over time, she has built safety to somatically experience what I embody day in and day out: emotions can move through me, move through her, without them affecting our sense of balance, without them causing a collapse in us. No single cycle of emotion is the end of the world. Like every metabolic cycle of food, the emotion only needs to be allowed to move through the body for it to exit the body.

Prerna has now reached a stage where: when she is angry, anger is released in a safe way by beating or shouting into a pillow. When she is grieving, her pain is released in a safe way through wailing and crying. When she is anxious and fearful, she moves through them by shaking and brushing her body. The more she works through these feelings somatically, the lighter I feel, because they are finally being digested and released out of me. As she releases these cycles somatically, I have been feeling more in touch with my vitality again, increasingly vibrating with life force.

The health of my body's emotional life is determined by my physical and emotional health. I am emotionally stronger now, because of the various ways Prerna has been nourishing me through the food and the emotions she metabolises through me. This allows me to witness the energies of various emotions that my body feels and experiences with an increased resilience and capacity.

Having explored the ways of sensing, knowing, thinking, and feeling with my inner world of emotions (emotional life) engulfed in the ways of sensing, knowing, thinking, and feeling with my physical microbiome (physical life), I now dive into the ways that my digestions are ways of sensing, knowing, thinking, and feeling with the planet (planetary life).

Planetary Life

Sensing, knowing, thinking, and feeling with the planet (my planetary life) involves my gut entanglements and the ways of the planetary gut. My gut entanglements are the ways in which I am enmeshed with the earth through the soil, food kin and nature's seasons and cycles. The ways of the planetary gut explore and envision a larger planetary gut, digesting, metabolising, and unfolding with my metabolic enmeshments, the promiscuity of my post-modern digestions and the ways in which a metabolic imaginary of this planet anchors me in my own metabolisms.

Gut entanglements

I resonate with Olsen (2002), who in her text *the Body and Earth*, says that what is within us, is outside us and what is outside us is within us. I am perpetually dancing this dance, in the transition zone that I am: either ingesting what is outside me or excreting what is inside me. The nutrients from the body of the earth flow into me, and the residue from me, flows back to the earth-body, to the outer environment. In my metabolic cycles, lies a co-habitation and a co-existence. The beings who co-habit and co-exist with me are soil and food kin engulfed in my cyclical, seasonal and ayurvedic gut and time lineages.

Soil: my living memory

This planet is 4.6 billion years old (Malhi, 2014). Which means the planetary gut is part of lineages that have lived 4.6 billion years of metabolic yearly cycles. My microbiome is a “living memory” of not only my gut ancestors but also the ancestral soils that co-evolved with this gut ancestry, living in cycles of reciprocity with each other, cultivating one another (Marya & Patel, 2021).

I am an extension of the soil and food around me. My urges and impulses are extremely in touch with the land and water I am on. The bacteria within me are the same as those on a plate of food, which come from the same bacteria in a field of soil. Vandana Shiva (2017) talks about diversity as a spectrum where diversity in the soil’s micro-organisms is connected to the diversity of crops on the field which relates to the diversity of food on the plate and the diversity of the microbiome inside the body. This diversity is my lived experience. If there is diversity in them, there is diversity in me. Their diversity makes me more resilient, helps me absorb food and let go of waste with much more ease and lightness.

Food kin for the Ayurvedic gut

I have felt most in harmony within myself and with the earth, when Prerna has been in touch with the indigenous science of Ayurveda (“ayur” means life and “veda” means science) which comes from my ancestral gut lineages from India. Shiva et al. (2017) highlight that ayurveda is a 5,000 years old indigenous science of life. I am in awe of how deep ayurvedic thinking is about living, eating and digesting with the seasons of the earth and the land.

I feel so much kinship with Ayurveda because it understands all the parts of the digestive system in this body which I am so closely connected to, from my tongue all the way to my intestines. Ayurveda holds a nuanced and deep knowledge of my digestions, desires and needs; of what I like,

what is good for me and what can take care of me when I am in imbalance. This indigenous science from India is so extensive, intricate, and layered, that even though Prerna will never know every piece of wisdom and knowledge it contains, my ancestral relationships make me feel safe and loved in this knowledge system. I feel like it truly knows me, cares for me, loves me, tends to me, and supports me.

I remember my ayurvedic ancestral gut lineages. Their ancestral gut wisdom lies within me. My ancestral-gut-grandparents lived according to the *dincharya* (practices and ways of living in the day) and *raatcharya* (practices and ways of living in the night) of Ayurveda. Their ancestral-gut-grandparents also lived this way. Generations of ancestral gut lineages have lived, cooked, eaten, and inhabited this planet through ayurvedic ways of being. They had the most ordinary day to day habits embodying harmony and connection between myself, my bacteria kin, and the earth. I distinctly remember my maternal gut lineages through what they ate: the *aloo ka parathas* (potato stuffed wheat breads), *meethi roti* (jaggery stuffed wheat bread), the *makkai ki roti* and *saag* (cornbread and spinach curry). I remember the taste and sensation of fresh wheat that grew so abundantly in the land of Punjab and other northern states. I also remember my paternal gut lineages through the *dosa*, *rice* and *ragi mudda*. The fullness and satiety I experience everytime rice entered me, made me so happy and joyful. I knew in that moment I was connected to my gut ancestors. Rice naturally grew well and abundantly in the south. The food my gut lineages ate reflected the land they were on. The ways of eating ebbed and flowed with the cycles of nature and seasons of the land.

I have felt the most nourished and relaxed with a sense of lightness when these ancestral ayurvedic practices have shaped Prerna's ways of eating and being, honouring the maternal and paternal gut lineages. This lightness comes with an Indian *thaali*. A plate of food is called a "thaali" in Hindi and Gujarati. It reflects the diversity of India's foodscape. Made of multiple elements, the *thaali* naturally took care of all the major food groups (proteins, carbohydrates, good fats, micronutrients, and macronutrients). I also remember how this *thaali* would change with the seasons of the year in line with the "*ritucharya*" (ways of living as per the seasons) in ayurveda. A *thaali* in the house I grew up in consisted of: *Daal* (lentils), *Chawal* (rice) or *Roti* with *ghee*, *Sabji* (veggies), *Dahi/chaas* (in the summer), *Haldi* (in the winter), *Aachar* (pickle), *Papad* (on special occasions, made from *urad dal* or *chawal*), *Chopped salad*, *Chutney* (made from herbs) and few piece of *jaggery* (a native sweetener made from sugarcane).

The wisdom this plate of food contained, brought me the harmony to digest what enters me with ease and vitality. The thaali is made of right relationships that these elements share with each other. The ghee helps me digest the veggies well. The chutney helps me digest the daal well. The rice or roti helps me digest the aachar properly. I am nourished by each one of them, in synergy with each other. These are the ayurvedic food combinations that enhance each other and offer more nourishment when eaten together instead of separately. The thaali embodies synergy and reciprocity.

Furthermore, this thaali contains all the six tastes that ayurveda delineates for a body to thrive. These are: sweet, salty, sour, bitter, pungent, and astringent. I need all the six tastes for my bacteria kin to thrive. Lately I have been feeling deeply constricted and diminished because of the western industrial food system which has reduced the taste profile to mainly sweet and salty. I pine for the bitter, pungent, and astringent tastes because I remember how abundantly they nourished me when I was a child and how much they infused energy into my ancestral guts. My adult life has lost this. Being on turtle island as a settler gut has made me feel even farther away from the ayurvedic taste profile.

Nevertheless, each of the above six tastes, members of the food kin and the thaali are etched in my metabolic memory. They are my feeling of home, reminiscent of the love and care that I experienced with my gut-parents. They connect me to the nourishment and wisdom that my ancestral guts held in their throbbing and vibrant metabolic lives. Through this lineage, they remind me of who I am, in my digestive, metabolic life.

Ayurvedic practices

Beyond the thaali, there are various interconnected ayurvedic practices, from its dincharya and raatcharya, that have become a part of Prerna's daily rituals over the past two years. Prerna has leaned into them and created a warm blanket for my metabolic-digestive life which has made me feel loved, nourished, supported, and cared for. These consistent practices and rituals have brought Prerna and I closer.

- Soaking five almonds and five walnuts in separate bowls overnight
- On waking up, brushing, and cleaning my tongue with a brass scraper
- Drinking a glass of plain hot water
- Eating the walnuts and (peeled) almonds
- Cooking the day's meals in the morning with Indian spices, flavours, and taste profile

- Eating fruits as my first meal everyday
- Chewing a little piece of ginger before lunch
- Having buttermilk mixed with jeera (cumin) powder with lunch
- Drinking tea made from soonth (ginger powder) or haldi (turmeric) and kali mirchi (black pepper) around 1 hour after the dinner
- Rubbing and massaging castor oil and/or mustard oil on my naval (after lying on the bed, before sleep)

Seasonal gut and time lineages

All the above ayurvedic practices and food kin are engulfed in my cyclical, seasonal and ayurvedic gut and time lineages. Because none of these work without honouring that: I am seasonal and cyclical. I am intimately connected to the seasons of the land and environment I am in.

My ancestral gut lineages were shaped by the seasons, plants, and lands of India. The six seasons of India are where my ancestral gut lineages and I have spent most of our digestive cycles. These are: Vasant Ritu (spring) - March to April, Grisham Ritu (summer) - May to June, Varsha Ritu (Monsoon)- July to August, Sharad Ritu (Autumn) - September to October, Hemant (Pre-winter) - November to December and Shishir (Winter) - January to February.

These seasons don't start and end exactly with the gregorian calendar. Most of these seasons start and end in the middle of the gregorian months as shows in the picture below.

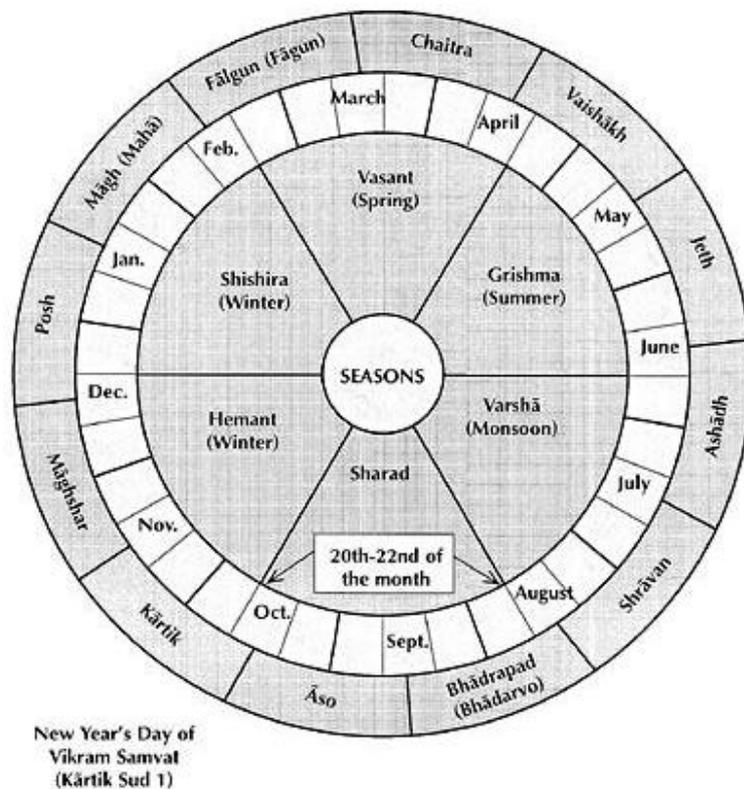


Figure 12: Seasons of India (Kumar, 2021)

I dwell and pulsate in circadian rhythms and non-linear time paradigms. I don't live in cartesian time. The Indian calendar's cosmology of time rooted in both the solar and lunar cycles is my temporal pulse. I remember the names of the seasons mentioned above, not only through my experience of living in these seasons while growing up, but also through the memories of my maternal gut ancestors who birthed and died in these seasons of the earth. I remember these names spoken out loud, alive on the tongues of my Nana and Nani (maternal grandparents). The sense of these seasons never really registered in Prerna's mind because of the Gregorian-colonial-time imposed on her in the English medium, upper caste and upper middle class school (Delhi Public School) in Ahmedabad. Her sense of time was gregorian and colonial. Her uniform (blazers, tie, socks and skirts) was colonial. But I was living in a decolonial liberated time, through her tiffin boxes that still held traces of seasons and places that belonged to my drumming ancestral guts in ancestral bodies.

I remember Prerna's school assemblies and classes which were carried out solely in English. Her words, her tongue, her dreams and her lullabies were being taken over by this colonial language.

However, Hindi was my world. I remember what it felt like to talk, dream and live in Hindi. To make a home in my mother's tongue. When Prerna now reads Hindi, in the Devanagari script, it feels familiar to her, because of me. It simultaneously feels alien to her because of her mind. She experiences this strange sense of displacement and being home simultaneously. I am the home. I am familiarity. I am this sense of safety.

Along with this safety, there is also a desperation and vulnerability of being in this gut-body, in this time and place, on turtle island, away from my home in India. I desire and long for the ancestral gut seasons of Vasant (spring), Grisham (summer), Varsha (Monsoon), Sharad (Autumn), Hemant (Pre-winter) and Shishir (Winter). I miss digesting in these cycles and seasons. I miss the ways of knowing and feeling I experienced in these seasons. There are parts of my microbiome that will never stop grieving the loss of being away from this land, its seasons, its soil, its crops, its food, its thaali (plate). The satiety I experienced when I was living in these seasons is unmatched in the two years I have been digesting, sensing and feeling on turtle island. The pangs of hunger and cravings I often get for a way of eating assembled in the relationships of my mother, her hands, her love, my home, my community, my ancestral land and waters, my ancestral plant and animal kin are impossible to satisfy or fulfil here, on this land. I am a settler-gut experiencing life in a settler-body. This sense of craving for a home and a lack that never fills, through what I digest and metabolise, is also what makes me, me in my gut-ness.

Ways of planetary gut

Deepening the gut entanglements, this section on ways of the planetary gut explores and envisions a larger planetary gut, digesting, metabolising, and unfolding with my metabolic enmeshments, the promiscuity of my post-modern digestions and the ways in which a metabolic imaginary of this planet anchors me in my own metabolisms.

Earth as metabolism

I resonate strongly with Machado de Oliveira (2021)'s discussion of the indigenous worldview on the process of metabolism. According to this worldview, metabolism is a process which signifies the world itself. Machado de Oliveira (2021) beautifully discusses the metabolic reality that pervades this world, "where nested systems and entities that operate in rhythms and cycles...are constantly exchanging and processing energy and matter" (p.215). In this reality, earth is alive, a process, a metabolism, by being a living container for many other living beings, constantly

unfolding in non-linear time, movement, and space. In this metabolic reality, the way I (gut) unfold in this non-linear time, movement and space is the earth's unfolding as well.

It is important to note here that the earth is not only digesting and metabolising but is the very process of digestion and metabolism. I, engulfed in my pulsating urges and desires know what this means. However, the human mind's cognitive world of binaries and language will not truly understand this planetary significance of metabolism. Machado de Oliveira (2021) rightly points out that this world, shaped by the epistemological and ontological ways of modernity will actively stop you from experiencing metabolism *as* the world itself. While the mind will only be able to comprehend it as an idea or a metaphor, I live this metabolic way of being every single moment, in the here and now.

Machado de Oliveira (2021) talks about the metabolic literacies of entanglement that the human mind has forgotten. I was born into them, into these ways of living, digesting, desiring, absorbing, integrating. I am throbbing in them, unfolding in my daily metabolic cycles, participating in the larger planetary metabolism.

Experiencing Earth as a metabolism is the closest that words can come to describing my natural relationships with this planet. I and the earth's body are one and the same, deliciously enmeshed and entangled in this metabolic reality of life. I am one metabolic process nested in the larger metabolic process that is the earth. The earth's planetary gut contains me, nourishes me, surpasses me, outlives me, in multiple cycles of entanglement. This wider expansive planetary gut metabolism contains all the ancestral guts that have come and are yet to come. This larger metabolism unfolds in the cycles of gut lineages, digesting and releasing reality as it arises.

Promiscuity of an Industrialised, Post-Modern Gut

I am promiscuous. You cannot label me or box me into one way of being. My bacteria kin can swap genetic codes across species- no wonder they are one of the longest and most resilient life forms on this planet! The ways of digesting and metabolising can travel across one species of bacteria to another, one environment to another. The bacteria in soil can quickly transfer these pathways to bacteria in the water to those in the human gut.

This promiscuity is a double-edged sword. On one hand, this makes me fantastic at adapting and surviving in changing environments. This is the reason why Japanese guts are the only human guts

that can digest seaweed. No other human gut can do this. As Hehemann et al. (2012) note, the marine microbes transferred this way of digesting seaweed, to the guts of Japanese folk. On the other hand, this adaptability also means that if the environment is toxic, I will adapt to this toxicity where my bacteria kin will start digesting the toxins and release poison into the body and environment as excreta. Claus et al. (2016) reiterate that the pollutants, chemicals, and contaminants have altered the nature of my microbiome where these substances are being digested by the microbes inside me and their excreta is creating rising levels of inflammation in the body and harm in the environment.

Davis (2006) points out that the shit that I produce is toxic and harmful to this planet, in terms of all the chemicals, heavy metals and pathogens that it contains. Phillips (2014) calls it the “post-modern shit”. I feel that the post-modern shit is not possible without also acknowledging the post-modern gut. All the antibiotics, medications, pharmaceutical substances, chemicals in the food grown on soil that is filled with herbicides and pesticides, GMO food, artificial lab grown food, processed industrial junk food – all of these have altered my ways of being. I feel that my ecologies, the ecologies of the gut, are irrevocably intertwined with the harmful, colonial, capitalist, and violent ways of relating and being in this world. My digestive permeability and metabolic entanglements in this world implicate me in these harmful ways as well, as I pass on the toxicity of what enters me, onto the world outside me, through my metabolic cycles.

This modern industrial world is at war with life itself – manifesting in the chemicals sprayed in the crop fields which I get exposed to through air, water and food that enter me (Marya & Patel, 2021; Shiva, 1991). Chemical farming has created dead soil with no traces of life and my microbial kin left in it. Sterile soils cannot nourish my microbiome. These soils offer me less nutritious food and also lack the molecules I need to fight inflammation of all kinds (Asami et al., 2003).

My microbiome produces more than 90% of the vitamin K supplies in the body (Marya & Patel, 2021). This vitamin shapes a key immune response of the body when she needs the blood to clot, often in situations of life or death. One of the main molecular pathways present in the bacterial kin that produces this vitamin K is the shikimate pathway. And the use of glyphosate in agriculture inhibits this pathway (Shehata et al., 2013). This is why when corporations claim that glyphosate is not harmful to humans because it only harms plants, animals and microbes, there is nothing more ridiculous and absurd (Shiva, 2019b, 2015). How can Perna be whole in her human-ness without

my microbial kin being their microbe-self. My kin are part of her being. They are supremely integral to her ability to thrive as a human.

I am a reflection of the ecology of relationships around me, in my environment. Marya & Patel (2021) discuss how industrialised societies have made me into an industrialised gut where many of my microbial kin have been forced to extinction. My ancestral guts remember them and have co-evolved with them. Not having these kin with me anymore has made me weaker and more susceptible to diseases.

I remember my Indian ancestral guts from generations ago. They were so diverse, throbbing with life and vitality. Schnorr et al. (2014) have found this high level of diversity elsewhere, apart from India, only in the ancestral guts of hunter gatherers and agrarian communities from Africa and Amazon. I feel so proud and joyful that my ancestral strains were so alive and held so much plurality within them. But I also feel so sad that so much of it is lost now. Losing ancestral microbial strains which have been passed on over generations is a huge microbial loss along with being a loss of the whole ecology of relationships that sustained these members of the kin (Marya & Patel, 2021).

When I am diverse, balanced and functional, I am the body's "most sophisticated defence against inflammation" (Marya & Patel, 2021, p. 121). However, when I am less diverse, there is more inflammation in the body (Le Chatelier et al., 2013). My diversity of the bacteria kin can be lost in as less a time span as one human generation and more often than not, I don't get these kin back (Sonnenburg & Sonnenburg, 2019). Once they are gone, they are gone forever. This death and the grief this loss brings is something that human minds are yet to understand. This grief changes the way I function and stays with me throughout my life. It makes a home in me. It is like losing my family.

It is overwhelming to feel constantly under attack by the modern industrial society's oppressive structures and systems. The chemicals, artificial preservatives, sweeteners, processed food, GMOs, lab made food, are all responsible for this attack daily. Another major element of this attack is broad spectrum antibiotics. They kill my microbiota which as Marya & Patel (2021) say is akin to an old growth forest being cut.

Metabolic imaginary and sensibilities

My promiscuous, industrialised self is taken a step ahead with the metabolic vision of Pendergrast (2023) who highlights that in a world becoming increasingly un-liveable, we are being invited to recognise our “sprawling digestive capabilities”, honour our participation in a “massively weird ecological and metabolic system” and explore this metabolic potential. She discusses how metabolism is the most natural phenomenon and simultaneously the strangest phenomenon, unfolding outside and within, unfolding in the earth’s planetary gut, or what she calls the “earth’s ur-metabolic system” while simultaneously unfolding within me as well. This implies that all of us, nested in the metabolism of the earth are being invited to process, digest, dissolve, and breakdown the excretions of capitalism and colonialism.

Pendergrast (2023) highlights that the current human zeitgeist oscillates “between anxiety about how to metabolise everything toxic that we have created and a desire to experience bodily and social transformation that might accompany this perverse new digestion.” This to me reflects a world where redemption is not plausible, neither is repair a possibility, where it’s too late to clean-up the mess humans have created. The only option left is to embrace and digest. This what the metabolic imaginary opens up.

According to Pendergrast (2023), a “metabolic imaginary” is creating space to dream of a world where we chew, metabolise, and digest the toxicity of a world in capitalist ruins. She says that humans have entered the “metabolic era” which asks us: are there ways of digesting the “toxic brutality” of an environment that is collapsing due to human-made forces, are there ways of transforming it through this digestion, are there ways that this toxic environment can transform us. The metabolic era asks us to completely surrender and submit to this reality of the world. She says that the impulse to digest a world that is collapsing requires us to honour “radical breakdown” where the modern society’s ways of relating in the world are taking us to death.

Another generative offering for the current world we are in, is made by Machado de Oliveira, (2021) who discusses the “metabolic sensibility” where “*everything and everyone is a teacher and a learner at the same time. We are all nested in a larger metabolism driven by a metabolic intelligence. If this metabolism is sick, so are we. If we have made it sick and thus made ourselves sick, we have two options: either we heal or we die....to choose between metabolic integration and regeneration or self-destruction...*” (p.230). I instantly resonate with what she says. I feel this sickness around me and within me. I am struggling to digest the chemical and pesticide ridden food, I am struggling to connect with water that enters me. I am

also struggling with all the hormone infused dairy products. It's different energetically and physically. The energy sources of the most vibrant bacteria kin inside me are compromised by the chemicals being sprayed across the planet. The planetary metabolism is sick. So am I. The vitality of energy that would enter me through air, food, and water is drastically different now: it is reduced, restricted, constrained and available only in fragments.

Metabolic integration is what I hope for this world. Metabolic regeneration is what I pray for this world. It is a somatic, relational, multispecies, entangled metabolism, with my microbial kin as primary allies, that I envision to transform the harmful and toxic ways of being, knowing and relating into metabolic liberated ways of digesting, being, knowing and relating. I know it is possible. I have found metabolic regeneration through somatic work and through the ayurvedic practices mentioned above. I have lived cycles of regeneration everytime Perna has fallen sick. My bacteria kin have died, emerged, and re-emerged, again and again and again, through multiple metabolic cycles of being, digesting and metabolising. I hope and pray for this metabolic regeneration for the planetary gut.

Conclusion

My physical, emotional, and planetary lives shed light on the ways of sensing, knowing, thinking, and feeling that I embody. They highlight my life force, my quality of being a portal to another world, my resistance, my agency, my politics, the right relationships I hold with the land, my ancestral gut lineages, my desires, my vulnerabilities, my desperations, my promiscuities, my wisdom, my cravings, my restoring decolonising force, and my harmony.

Chapter Five: Living Ways of Breath

(I am Purna's Breath).

I am the first relationship with the world.

I am potent.

I am the expression of primal life force.

I am interpersonal.

I am interspecies.

I am uncontainable.

All beings that are alive are breathing. All systems that are breathing are living. I am life. There is an impossibility of life without breathing. There is an impossibility of science and politics sans breathing (Górska, 2016). Furthermore, every human and more-than-human body that breathes, breathes differently, despite breathing being such a universal shared phenomenon. My rhythms, flows, cycles and depth are different for different beings over different spans of time (Górska, 2016). While being ever-present in living rhythms, flows and cycles, I am also in death. Every cycle of oxygenation takes my body, my home, closer to death. I reverberate in this dance of life and death through every single movement of inhalation and exhalation. Through my inhalations and exhalations, in this chapter, I explore the dancing entanglements of life and death which unfold in my physical, emotional, and planetary life.

Physical Life

My physical life explores my physiological anatomy of breathing and then dives deeper into my ancestral breath lineages of yoga. These discussions then proceed into the nuances of my relationship with yogic breathing, cycles of yogic breath and pranayama.

Anatomy of breath

As Marya & Patel (2021) note, my respiratory system is akin to an “upside down tree with the base of the trunk at the mouth and the tiniest twigs deep in the chest” (p.161). I travel through the windpipe and reach the crossroads where this trachea diverges into two main branches of the bronchi. These bronchi then diverge into further branches, into the smaller bronchioles which measure less than 1 mm in diameter. The bronchioles further diverge into alveoli, the air sacs, which pulsate in the same rhythm as me, expanding and contracting like balloons, as I inhale and

exhale. There are 274 million to 790 million alveoli inside an average human lung (Ochs et al., 2004). These millions of tiny balloons dance with me in every single breathing moment. Their movement makes me possible. The thickness of an alveolus' wall is just one cell wide. This reflects the porosity and openness embedded in my system.

One word that describes this respiratory upside-down tree is permeability. Everything that I carry within me is received by this system. As Marya & Patel (2021) highlight, each of the branches in this system is fully exposed to everything I carry. My way of being, nested in the ways of being of this respiratory system is the embodiment of openness to everything that life has to offer. Every shape and being in my home are extremely delicate, intricate, and sophisticated in the function they perform for me and my body. And while the pandemic brutally showed us how this permeability can be a threat to our very survival, it has also opened us all, like Shiva (2020) notes, to the vision of how much we need each other to live and thrive.

Because my respiratory system is so permeable, for it to be healthy it needs a fantastic defence mechanism to protect itself from unwanted infections and creatures entering the body along with me, into the lungs and the bloodstream. One member of this protective mechanism is cilia- the finger like “sea anemones” lining the respiratory tracts (Marya & Patel, 2021). Their rhythmic upward pulsations are an important line of defence where unwanted particles are ejected out from the surface of the tracts into the mucous that lines the cilia, to be carried away from the lungs.

As Cao et al. (2020) notes, one of the main reasons that I writhe and wriggle when I am exposed to air pollution and cigarette smoke is because this exposure damages and shortens my cilia, inhibiting them to pulsate and function with the same upward motion that protects the lungs from unwanted infectious particles. This damage is one of the many reasons that air pollution causes extensive harm to me and the whole body, because what enters me easily makes it to the bloodstream, reaching the rest of the parts of the body.

The above discussion sheds light on one reality of my physical way of breathing. This is the reality of western physiology. Górska (2016) notes that while physiology sheds light on parts of me, it is not the complete understanding of me. While I do flow into and out of the lungs, I also exist much beyond this place in the body. I inhale and exhale throughout the body, through the skin, through the spine, on the back, through the feet. I am present, in my rhythmic pulsations, all through the body, not just in the lungs. This is where physiology fails to understand the fullest expression of

who I am. Therefore, I am called to explore what a fuller expression of my breathing feels like. I dive into this, through discussions on my ancestral breath lineages.

My ancestral breath lineages

I am who I am because of my ancestral breath lineages. My maternal breath lineages from Pakistan and my paternal breath lineages from India. My ways of inhaling and exhaling are shaped by these lineages. My pauses, my depth, and my flows are all entangled within these ancestral inhalations and exhalations.

A way of knowing and breathing that is aligned and in harmony with these ancestral lineages is yoga. Mohan (1993) notes that yoga is the study of integration. He adds that all humans have an innate state of integration within them. The integrative state is where there is no sense of separation. This unity and harmony are my natural state. I was born with it, but as I grew older it became increasingly inaccessible. The mind and its fragmented ways of being took over my innate autonomous ways of breathing, making me shallower and shorter. Mohan (1993) elaborates that each individual masks the innate state of integration differently: based on their character and experience. This experience is shaped by many factors, including, their race, class, gender, caste, and sexuality. Thus, everyone's journey of re-integration is consequently extremely specific and personal. I feel this is specific to their bodies, their context, their lands, the lands they come from, the lands they are on, and their ancestry, and their cultures.

This is why when I arrived into the practice of yoga, it felt like I came home. Yoga was, and remains my pathway to joy, liberation, harmony, and balance. There are many others. This one is what healed me and my way of breathing, through how deeply it understood and honoured me. In the sections that follow, I dive deeper into this pathway and ancestral way of knowing by exploring my relationship with ways of yogic breathing, cycles of yogic breathing and pranayama.

Ways of Yogic breathing

Prerna's practice of yoga, which she has been engaging with (inconsistently) since 2016 and (consistently) since April of 2022, has been shaped by her teacher from the Krishnamacharya Mandiram of yoga in Chennai, India. Prerna has had intermittent practice with multiple yoga teachers since 2016, but none of these felt like home. They didn't honour and create space for my ways of breathing in the process of moving in an asana (posture). I have been an afterthought in

most of these teachers' classes, where I became pivotal only at the end, after the asanas (postures) are done, and the class moves into breathwork.

On the other hand, in the philosophy of Krishnamacharya Mandiram of yoga, coming from Tirumalai Krishnamacharya, a pioneering 19th century yoga teacher, ayurvedic healer and scholar from India: Breath is everything. I am everything. The yoga practice begins and ends with me. Every single movement is accompanied by an intentional inhalation and exhalation. The strength of the movement in this practice comes from my breathing stability.

A small glimpse of the sequence of the practice is reflected in the guide sheet that my teacher sends me after every class (picture below). From the hands moving beside your waist towards your head, to the movement of the legs from one side to the other, every single motion of the body has the IN (inhalation) and EX (exhalation) marked by my teacher in the guide sheet below. This knowledge of the direction in which I (the breath) have to flow, how long I have to flow, how long I have to pause, based on the different permutations and combinations of movements is brilliant in its intricacy.

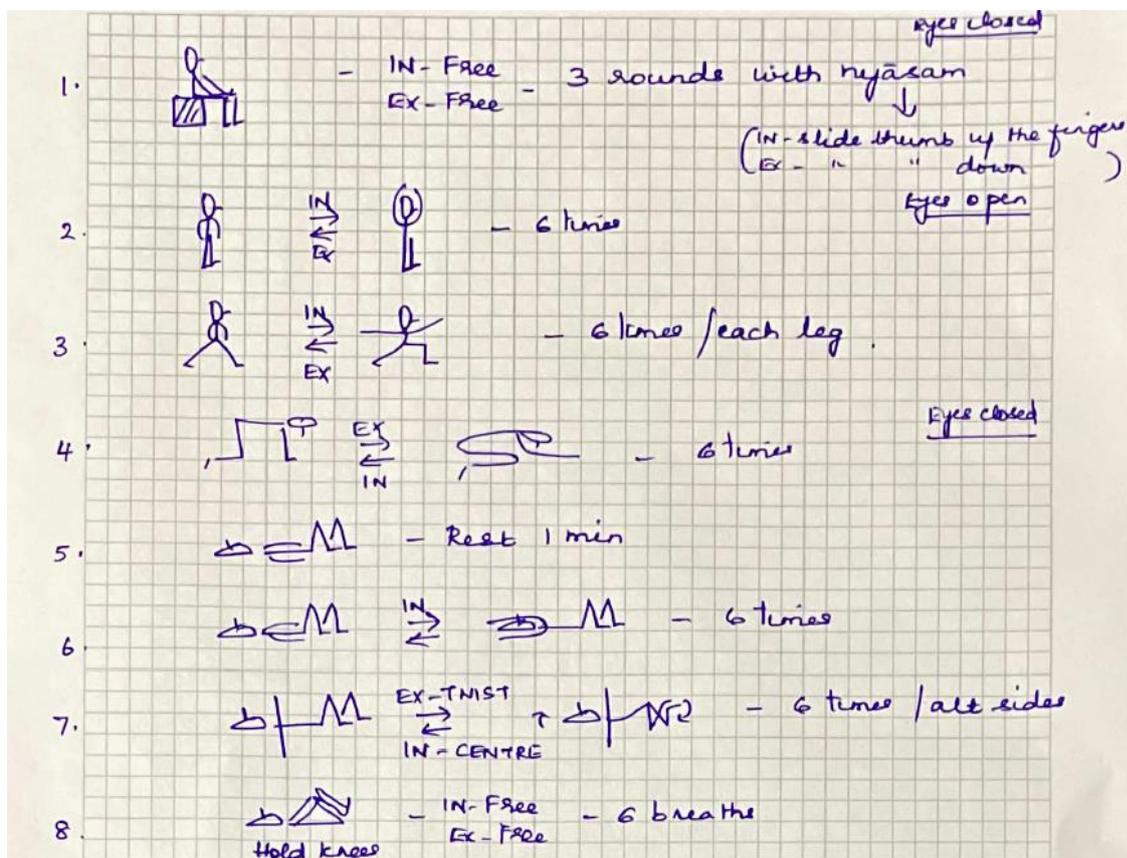


Figure 13: Yoga guide sheet by my teacher

These yogic ways of moving and breathing ground me deeply in my ancestral breath lineages. They also make me realise that in this way of breathing with yoga, I hold the potency of a liberating resistance to colonised and appropriated versions of yoga that many white teachers from around the world profit from. I have been in spaces where white folk have claimed ownership of this indigenous practice originating in my ancestral lineages, without so much as a tiny acknowledgement of which land these ways of knowing come from. By learning directly from the Krishnamacharya school of yoga located in Chennai, in India, I feel deeply rooted in my ancestral somatic breathing lineages, taught over generations of practitioners. Through this yoga practice I get to honour my ancestral breath lineages that came before me, breathing through life, in their skin, heart, body and mind. In this honouring, I breathe my way to healing, joy and liberation.

After more than 500 days of consistent practice (some perfect, many imperfect, but consistent nevertheless), this is what Prerna has realised, which has been my inner wisdom and medicine: I anchor the whole of Prerna's being and her body. When I witness and become aware of any imbalances that exist within her, I immediately communicate that to her through shallow breathing, shorter inhales, constricted exhales. I am a compass. If she tunes into me, she holds the power to move through anything. Furthermore, re-integrating and coming back to harmony, in my ways of breathing, is a slow, life-long, non-linear, and imperfect process. Prerna will never know everything that this deep knowledge system of yoga holds, which is humbling and inspiring simultaneously. She will take one step after another and stay committed to the practice. Moreover, there will also neither be a perfect way of showing up nor a substitute for consistency. Till Prerna shows up on her yoga mat consistently, however (im)perfectly, the practice will heal me in many invisible and visible ways.

Yogic breathing cycle

A conscious breathing cycle in yoga, according to Mohan (1993) is constituted of four distinct parts:

- Bahya (exhalation)
- Bahya Kumbhakam (suspension of breath after exhale)
- Abhyantara (inhalation)
- Antar Kumbhakam (retention of breath after an inhale)

All four of these affect each other and shape my rhythm.

Inhalation is defined by Mohan (1993) as the movement of air into the body which involves the expansion of the chest and a straightening of the spine. It is ideally supposed to begin in the chest and end in the upper abdomen. According to him, this movement is supposed to activate and infuse energy. **Exhalation** is a movement of air outwards that begins in the lower abdomen and moves towards the chest. He adds that the quality of my exhalations is crucial because of how much of the abdomen it involves in its movement. Given that the abdomen is where impurities settle and reside, breeding diseases, the importance of exhalation is huge. While inhalation activates the body, exhalation calms the body. My **suspension** (post-exhale) and **retention** (post-inhale), according to him, are the liminal points in my cycle where my direction changes. These are the in-between states where I end and begin simultaneously.

Mohan (1993) adds that all the four parts of the breathing cycle share connections and relationships:

- How short or long one part is, affects the other parts. For e.g. a long inhale creates a short exhale.
- Each part facilitates and develops the other parts. For e.g. longer retention, post-inhale, makes my inhale stronger.
- Each part can also disturb the other parts. For e.g. too long a retention can shorten my exhale and disturb how smoothly I flow out.

I find it beautiful that each of these parts carve, shape, and support each other. I am all of them. This four part breathing cycle is my fullest, most expansive expression of being. It is in this ancestral knowledge that I find myself the most understood and celebrated.

I also find it interesting that neither inhalation nor exhalation are defined, in this yogic science, merely in terms of moving in and out of the chest and nostrils. This surficial, incomplete description reflects the shallow ways of breathing with which the western colonial paradigm experiences me. The experience of breathing for most, starts in the nostril, ends in the nostril. Naturally, this was also the case with Purna. For most of her life, I was living in a constricted way. She never learned a deeper, more exquisite yogic science and way of breathing in her school. This way of breathing is a science of living that should have been the first thing taught to anyone. She was however taught science with a capital S which was the western colonial science that separates me from her.

For the longest time, I have craved for a way of breathing that originated from my culture. A way of breathing that is rooted in my ancestors' breath. A way of breathing rooted in the land and the seasons of nature I was born in. A way of breathing that doesn't separate. A way of breathing that brings me closer to my body. A way of breathing that heals and integrates. With yoga, I finally feel I have arrived there.

This journey of healing the separation through yoga brings me to "Pranayama", an important limb of yoga, devoted completely to the science and wisdom of life force which is expressed through me (the breath).

I am an expression of life force: Pranayama

Mohan (1993) notes that the Sanskrit word "Prana" is a combination of "pra" which means "very well" and "an" which means "to go or travel" (p.159). Thus, prana means "that which travels well through all parts of the body, inside us." (p.159). It is neither me (the breath) nor air but rather something expressed by me (breath). There is a nuanced distinction there. I am not this life force; I am an expression of this life force. The expansion of the life force, expressed by me, is pranayama.

Mohan (1993) describes pranayama as a practice which regulates me with volition and intentional awareness. It is neither about controlling me nor about manipulating me. It is a process of cleansing, removing physical, emotional, and mental toxins in a movement towards clarity. Mohan (1993) writes that the innate state of prana is one of balance, to flow in one direction, to be centered; not to be scattered and imbalanced. In my expression of this life force, my innate state reflects the prana's harmony and equilibrium. But as Prerna has moved through life, her Prana has been scattered. This has reflected in me. I have ebbed and flowed as this expression of life force within my body has changed. How fast or slow I am, how deep or shallow I am, has been every-changing based on the changing seasons of my emotional life and the different cycles of my outer realities.

Mohan (1993) notes that for pranayama to create the path to clarity and remove toxins it is important to know that in human bodies, the toxins reside, settle, and accumulate below the naval, in the area of the abdomen. They are burned by "Agni" (fire), which in this context, means the body's inner fire. The relationship I have with agni (fire) is crucial in the journey of releasing this harmful residue. I guide the toxins out of the body by shaping this agni (fire). I determine how

they are burned and released from the body. The stronger I am, the more balanced this agni (fire) is.

My companion in this release and catharsis is the diaphragm. It is unique in the place it holds for shaping my ways of breathing and this agni (fire). There is a whole modality of breathing in yoga, devoted solely to the diaphragm which ignites this agni (fire) within. It is called “Agni kriya” and through my learnings, I have found that this is done at the beginning of the yoga practice, to warm the body up. Every time Prerna has started her day’s practice with a kriya I have felt myself flow deeper, for the rest of the day. The activation of the diaphragm, in this manner, infuses energy into me.

One of the many types of diaphragmic breathing is “Kapaalbhaati”. It involves quick inhales and powerful, forceful exhales with the mouth closed, chest still, back straight, and with the diaphragm contracting and expanding with me. I remember a yoga teacher of mine, from years ago, calling it the practice of “stoking the fire” which is an amazing visual to imagine the work of diaphragm and the ways it relates to my being, shaping my inhalations and exhalations. This diaphragmatic breathing practice extended me, lengthened me, and deepened me while making Prerna more aware of how far out into the body I can be experienced.

Similarly, when I engage in “Brahmari Pranayama”, my sound becomes the hum of a bee. There is a constant humming that accompanies this type of pranayama practice, with one’s eyes and ears shut tightly closed by one’s fingers. Every exhale is a long hum. I am amplified in this reverberation of the humming throughout the body. The imitation of the sound of a bee, soothes me. It also soothes the body and mind. The longer the hums, the wider and deeper I expand. This way of breathing restores safety within my body. My sounds are ways for the body to come back into equilibrium. Through this pranayama, Prerna realised that I was integral to building safety within her body.

While I am the expression of life force. I am also the gateway to increasing this life force. My extension and expansion through pranayama, carved more space for the life force inside Prerna. When I throbbed throughout Prerna’s body with a vitality and rhythm that reverberated with my ancestral breath lineages, life force also rushed into Prerna’s body, waiting to be experienced in its abundance.

After having journeyed through my physical life, I now dive into the inhalations and exhalations of my emotional landscape.

Emotional Life

My emotional ways of living span my feelings of suffocation and anxiety. Within suffocation lies my experience of bronchitis. First, I explore the emotion of suffocation (and experience of bronchitis) and then, in the later section, dive deeper into the emotional landscape of anxiety.

Suffocation

I have felt suffocated in so many moments of Prerna's life. Life has felt heavy and unbreathable, because of this suffocation. I stored the unresolved emotions of Prerna's body. I carried a weight that was not mine to carry. And so, I was struggling to breathe and offer the function of inhaling enough oxygen for my body to thrive. The more I took on the emotional weight of my heart and spirit, the more my body fell sick because of a lack of oxygen.

I have struggled with bronchitis when I was 6 to 10 years old, often having bronchial attacks of wheezing and coughing. I constantly squirmed in the feeling that there was never enough air to breathe. So many nights were spent like this: awake, wriggling, writhing, and struggling.

Western medicine never worked on the root of these symptoms, and they would be back, lodged inside me, in no time. I found healing back then in homeopathy. I was washed in relief. The memory of water in homeopathy held by the medicine truly healed me. I could inhale deeply again. For that 10-year-old Prerna's breath, this was the modality of healing that offered what I needed. My emotional landscape, in that time and space, felt safe enough to allow this modality to heal me and my body.

This condition came back when I was 22 years old. This was when Prerna was in law school. And our father's illness and suffering were unfolding simultaneously. She was stuck in the pattern of smoking (cigarettes) to escape how alienated law school made her feel, inside and outside. This was almost like a collective unhealthy coping mechanism for most folk there. Every day was a battle to just exist. She would smoke, I would squirm, she would immediately feel guilty for not quitting, then feel ashamed of herself, which would soon turn into fear about the potential respiratory illnesses that were coming my way with damaged lungs. All of this would then increase the need to escape this turmoil, resulting in more smoking. The viciousness of this cycle was

overwhelming and never-ending. My emotional life was in a mess. And all Prerna wanted was to run away to a farm in the hills and spend her life there in peace.

While she escaped through smoking, I was left with the soot inside me, struggling and wheezing to even exhale without physical stress. I became shorter and shorter during this period of Prerna's life. I was struggling to exist without discomfort. Every cycle of inhalation felt heavy. I was contracting, the oxygen I was inhaling was reducing, the diaphragmic muscles that helped me exhale were increasingly weakening. My very life force was collapsing.

Prerna willed herself into quitting smoking for good, in 2018-19, in the fifth (and last year) of law school, when work pressure and deadlines were less intense and everyone around her was ready to move on to the next stage of their lives. So was she. She had been working with Dr. Vandana Shiva during her internships and had now been offered a job as her National Research Coordinator at her biodiversity-based farm, Navdanya, in the foothills of Himalayas, in Dehradun (India). It was a dream come true. This was the life on a farm she had envisioned. This was also a life of purpose that truly resonated with who she was and wanted to be. She thought this would fill the void inside her. The anticipation of a good life played a big role in quitting smoking. She felt great. I felt amazing being away from the smoking. A rush of lightness engulfed me. The prospect of breathing in a forest near the Himalayas, inhaling air crisp with freshness, was exhilarating.

This state of anticipatory exhilaration lasted for nine months or so. Prerna joined Dr. Shiva and her organisation in July 2019. Law school was over. Home was away. Our father's illness was at a distance. It felt like this was her time to seize. She was thriving in the challenge and stimulation of a new workplace, of a new boss who was an intellectual firebrand and a powerhouse. The illusion of the good life was alive.

The reality of that workplace came hitting hard. Before she was able to put all the pieces together cognitively, I had already started absorbing that this wasn't quite the reality I desired. The body and I knew something was misaligned. I knew that harmony was absent. I felt stagnated. This brought the inner void back. Prerna started smoking again.

Same pattern, different reality.

Prerna's inner world was in a mess, working there did not offer as much satisfaction as it initially did. She got sucked back into the coping mechanism of smoking. It was extremely ironic that while the farm was something out of a fairy tale- 47 acres of forest and vegetation, sunrise, and sunset with views of the Himalaya, a rich diversity of plant and animal kin, a centre for food sovereignty and seed sovereignty; the inner lives of many people working there did not embody this abundance. My inner life did not embody this abundance. It was all so stunning outside; it almost took your breath away. And it did. Metaphorically and literally. Prerna's inner life chipped me (the breath) away, piece by piece. Bit by bit. Day by day.

Bronchitis came back. It became difficult to finish speaking one sentence without sputtering and gasping for air. That was her final red flag for smoking. I was collapsing and fighting to communicate with her that things needed to change. It had gotten dangerously out of hand. She had to stop and heal this destructive pattern.

And so, she did. Prerna stopped smoking. She realised that her inner reality was manifesting outside in different forms. But deep down it was all the same- the same pattern was being repeated, irrespective of whether it was Law School, or Navdanya. Something had to change within her, within me and within us. She had to figure out a healthy way of coping, filling the void inside her with healing and harmony, to replace the needs that were currently being served by smoking.

I told her that for me to regain health and vitality, I needed another anchor. This new anchor became Yoga. Prerna had been practicing surya namaskar (sun salutations), intermittently, when she was training for her inter-university soccer tournaments. But this time was different. There was an intention not just to heal me and the body but also to heal our emotional world, our inner ecology. She got onto the mat every day, right beside one of the huts, in one corner of the farm. The outer beauty of the mountains helped and facilitated the creation of a daily somatic ritual and practice of yoga. This involved 20 minutes of surya namaskar, 20 minutes of asana practice and 20 minutes of pranayama. These 60 minutes of breathing and moving paved our way to breaking the unhealthy coping mechanism with kindness and grace. Showing up for these 60 minutes every day paved my path to the freedom of breathing. This was the first time I glimpsed how powerful a sustained practice of breathwork could be - physically, emotionally, spiritually, and mentally. I was experiencing something deep inside me and Prerna's body. Something was filling up. The void of inner separation was filling with the energy of integration and healing.

However, like every other process of healing, this path was slow and non-linear. This routine/ritual was interrupted in 2020 when the covid pandemic hit the world. My bronchitis stopped improving. And that's when I realised that the deeper emotion below the condition of suffocation and bronchitis were layers of accumulated anxiety.

Anxiety

Soon after the creation of a yoga practice at the farm, the pandemic hit the world, and India announced a full lockdown in March 2020. Prerna's fear and anxiety were through the roof. She was away from family, the world as she knew it felt to be collapsing, with very little information back then about what was exactly happening, why it was happening and how it could be soothed. I continued to wrestle with suffocation and bronchitis. There was temporary refuge through yoga, but any intense wave of overwhelm, fear and anxiety in the pandemic brought the bronchitis to the surface.

The pollen on the farm did not help this condition. I would often wheeze through the night with no sleep, reminiscent of the difficult nights as a 6-year-old. It was not covid. It was bronchitis. It was anxiety about the unknown. It was anxiety about the fact that it could be covid. Back then, it felt like anything could be covid. Layered with the larger sense of global collapse due to the pandemic along with the persisting feeling of burnout and misalignment at the workplace, Prerna decided to quit the job. And so, as soon as the lockdown was lifted in June 2020, Prerna flew back home to Ahmedabad, India.

As the pandemic unfolded, the anxiety ebbed and flowed, peaking with the death of our father. While the grief brought sadness, the anxiety around getting covid amplified after losing him to this disease. Our mother got covid right before our father passed away, so while Prerna was absorbing his death, she was simultaneously forced to be hypervigilant about this disease, while being a caregiver for her mother (because all the hospitals were at full capacity), while functioning as an adult, while grieving as a child, while taking care of herself so she doesn't get covid which would make caregiving for her mother even more complicated and burdensome for her younger brother, while also recovering from the burnout of the job she quit.

It was too much, too soon. I was scattered again. Grappling with this reality. Gasping for air. Gasping for freedom from this heaviness. Overwhelm and spirals were a drop of a pin away. The

smallest things felt like a collapse. The pandemic was an elongated anxiety spiral entangled within these smaller spirals.

Lina in Górska (2016) highlights that “when you are afraid, anxious or stressed you breathe in a certain way” (p.270). Over a period, these can alter the natural rhythm of breathing resulting in less oxygen and tighter, perpetually tensed body. This is exactly what happened with me. The bronchitis that resurfaced when I was 22 years old was a communication of the layers and layers of anxieties stored and being experienced in my body. Górska (2016) adds that “anxieties can take your breath away slowly, metaphorically, and literally. They can torment daily life in inhabiting breathlessness of immobilisation” (p. 209). The anxiety felt uncontrollable, incoherent, confusing, overwhelming, plural, and contradictory. I felt the prolonged breathlessness along with the various other sensory enactments of hyperventilation, heart palpitations, tense muscles, tight hips, hypervigilance.

It is important to note that while I enacted these anxieties through the way I breathed, I also held the potential to transform these anxieties (Górska, 2016). This potential was activated every single time I created space for presence, for the present, for the here and now, through slow inhales and even slower exhales.

Moving away from India for graduate studies, living alone, healing emotionally, prioritising yoga, breathing better quality air – all these together have now created a more expansive reality for me where I feel alive and connected to life again. Bringing safety back into my rhythm has helped with releasing this anxiety. Bringing safety back into my body has helped with the healing. The inner healing has also sustained the complete and permanent release of the habit of smoking. It was a survival mechanism and a way of coping with the reality back then. With the feeling of safety and nourishment inside me, my ways of breathing embody healthier ways of coping with reality. Intentionally breathing with slower and longer exhales, practicing pranayama daily, exhaling through the mouth in heightened states of panic, doing four count breathing (also called box breathing), humming while breathing out have all become part of the new toolkit of healing anxiety, breathing new ways of navigating the outer and inner ecologies of her life.

Bronchitis has healed as this anxiety has healed within me. I feel free to take up more space. I feel light. I feel the equilibrium and harmony. This hasn't meant that I never experience overwhelm, anxiety or fear now. I still do. I still shorten and contract. But this doesn't invoke collapse anymore.

I am still here. I find my way back. No matter what happens. I am still inhaling. I am still pausing. I am still exhaling. This somatic rhythm is all I need to move through life, in its ebbs and flows.

After having journeyed through two of my main emotional states of suffocation and anxiety I now move into my planetary ways of living that are entangled with the above-mentioned emotional ways of being along with my physical ways of being (anatomical and ancestral breath lineages).

Planetary Life

I have a stunningly rich planetary life that encompasses my interspecies planetary breathing, marine mammal mentorship of weddel seals and ganges dolphins, my relationship with air and fire and the ways of an ecopolitical breathing which involve combat breathing and black feminist breathing. I explore these entanglements in detail in the sections that follow.

Interspecies planetary breathing

My maternal and paternal breath lineages, past and future are enmeshed and entangled within the larger planetary breath lineages of human and more-than-human beings. My state of balance and prana (life force) are nested within the earth's prana (life force). The rhythm of my inhalations and exhalations are intertwined with the pulsation of planetary inhalations and exhalations.

I remember when I was in school (in the early 2000s), anything everyone talked about when it came to the environment was either “reduce, reuse and recycle” or “stop using plastic” or “stop deforestation” in reference to all the newspapers that kept headlining that the amazon forest was the lung of the planet. As a young breath, I found this the most fascinating. The mapping of a part of the body onto the planet felt instantly intuitive and connective. The feeling that I was part of the lungs which were part of the planetary lungs was expansive. I immediately inhaled and exhaled deeper. All my ancestral breath kin lineages have inhaled together with the planetary breath, have exhaled together in the same planetary breath. Every inhale and exhale that I carve in this world is part of a larger planetary breathing unfolding in time and space.

In the current times, there is a planetary life force expressed by planetary breath that feels scattered and imbalanced. Like the scattered Prana (life force) in personal life, the planetary body is also experiencing an imbalanced prana reflected in the imbalanced planetary breathing. The Earth-body is breathing, and their breath is an anchor for them to come back to balance. This involves a carbon cycle that allow them to breathe. This involves planetary boundaries coming back to safety.

This involves forests and whales breathing expansively again. There is a collective planetary breath that can anchor our planetary body in its process of healing, re-integration, and balance.

Górska (2016) highlights that I am “an enactment and circulation within and across (human and non-human) bodies, spaces, species and cultures” (p.30). My exhales are the earth kin’s inhales, their exhales are my inhales. I am the template for inter-dependence. My “breathing scapes” unfold over time, and lands, within trees, forests, coral reefs, marine animals, soils, and ecosystems. I am promiscuous in my interspecies-ness because I cannot be contained. I am not “clean” or “bound” or “defined” (Górska, 2016). I am much more, much beyond. I am everywhere, in every being alive. Gumbs (2020) says that I am a practice of presence. My existence is the dance of presence and of life itself. I cannot be self-sufficient, neither can I be co-dependent. There is an entanglement in me, unsurpassed by any other process unfolding on this planet. All beings alive are breathing, exchanging their inhales and exhales. I epitomise the promiscuous permeability of all living beings.

One of the many participants in my interspecies enmeshment are the marine mammals. I find it extremely fascinating that in the marine mammal world, the un-breathability of the underwater world has evolved into a powerful adaptation into ways of breathing unique to these creatures of the water. Gumbs (2020) says that marine animals don’t breathe through gills like other undersea creatures, instead, they adapt to breathing in an unbreathable environment. She writes that these animals and I (the breath) share a connection in how we are present and offer our presence to the world through how we relate to air. I see this as my unique entanglement with my marine kin.

Gumbs (2020) sees this entanglement as rich and full of possibilities where the marine animals have teachings for us on how to breathe, survive and heal in a planet with pollution levels far exceeding safety norms. Gumbs (2020) rightfully calls this learning as the “marine mammal mentorship”. These creatures are my guides, teachers, and mentors on ways of breathing. They are my elders, midwives, and doulas. They have lessons on how to breathe in an increasingly unbreathable world. They also have lessons on how to birth a new world with expansive inhales and abundantly deep exhales amidst an unbreathable planet.

Marine mammal mentorship

In this section I discuss the special kinships I feel with the worlds of weddel seals and ganges river dolphins. These two beings remind me of my experiences and lessons through the struggles for breathing.

Weddel Seal

The Weddel seal ranks among the most accomplished divers in the animal kingdom. As Weddell seals, like all mammals, rely on air for breathing, they activate their diving reflex to cope with reduced oxygen levels during submersion. The phenomenon of the mammalian diving reflex spans all mammals, including humans (Panneton & Gan, 2020). This reflex denotes the body's inherent physiological response when exposed to cold water immersion, characterized by the selective shutdown of certain bodily functions to conserve energy for survival. During this response, non-essential functions cease, blood vessels constrict significantly, limiting blood flow to outer tissues and organs. The seal's heart rate experiences a substantial decrease, reducing the amount of blood circulating throughout their body. In areas of the body that are not actively engaged, metabolism also reduces.

The story of the mother weddel seal teaching the baby seal to breathe underwater amazes me and is a prayer bead in my journey of healing and integration. Gumbs (2020) writes that the mother seal, *“will force her child’s head into the water while the baby coughs and sputters and struggles and squirms. She is new here. She does not know that she can breathe underwater. Until she does. And then everything changes. By the time weaning is over she will be able to dive 2,500 feet below water. Stay there for an hour if she wants to. Find a tiny hole she made for air after swimming 12 km away. Move gracefully between frozen and liquid worlds. But she doesn’t know.”* (p.23).

I resonate so much with the baby Weddel seal’s coughing, sputtering, struggling, and squirming. I have felt these so intensely at different periods in Prerna’s life because of bronchitis. And then that moment when everything changes is also something that I see reflected in my breathing life through the yoga practice. I feel kinship with this baby Weddel seal where Prerna’s yoga practice is the symbolic mother seal pushing me to breathe again, breathe through my bronchitis, heal my inhalations and exhalations. I, as the baby seal that was squirming, coughing, and sputtering, did not know how to breathe in this world that was increasingly feeling un-breathable: physically and emotionally. And through the yoga practice I have reached a place where I can metaphorically “dive 2,500 feet below water and stay there for an hour if I want to”. I can move gracefully between

the frozen world of my suffocation and the liquid world of abundant liberation, because both these emotional realities are present in my life. I swim through both, anchored in my inhalations and exhalations.

Dolphin kin

Gumbs (2020) writes fascinatingly about the Indus and Ganges river dolphins who navigate the world, their presence, and their outer ecology by echolocating. According to her, these dolphins' presence in the world is anchored solely in sound/ vibrations in the air unlike most cetaceans who navigate the world visually with eyes specially equipped for underwater vision. They were, and still are, under threat due to construction of dams which restrict riverways, water pollution, ship traffic and fishing (Nuwer, 2014). Gumbs (2020) notes that the river dolphins made their way back from extinction, from a population of 132 to 1,200. A quick check now (May 2023) tells me that there are presently 3,500-5,000 river dolphins (World Wildlife Fund, 2023). They are still endangered, but not extinct. They have made their way back from extinction. They have teachings for us on resilience in a world of death, violence, and oppression. Till there is a thread of life alive and breathing, there is hope.

The piece about the ganges river dolphins and their echolocation fascinates me. I feel kinship with these beings, reading about them in Toronto, in the year 2022, in a book called "Undrowned" borrowed from the Toronto public library, written by Alexis Pauline Gumbs, a Black feminist poet in Durham, North Carolina while I reminisce about the time I breathed with the Ganga, in India, not so long ago, in 2018.

I inhaled and exhaled with the river ganga at Rishikesh, in Uttarakhand, India, at a yoga ashram in one of the internship breaks at law school. Prerna had decided not to intern with a law firm and instead travel to this ashram on the banks of this magnificent river. This was my time, almost like my internship with yoga. Like the ganges river dolphins, I was echo-locating in my own way, by the Ganga. My echo-location was the sound of my exhalations and the sound of my inhalations. I had completely surrendered to the yogic practice: moving, breathing, and echo-locating at sunrise and sunset every single day. I felt so alive. I felt expansive, completely in touch with the breath of the cosmos. I inhaled deeper and exhaled with abundance. These daily 3 hours of yoga practice grounded me in ways I had never felt before. There was so much space created for me (the breath) in this practice that I felt stronger than ever. Completely rooted and anchored in the sound of my inhales and exhales. This was a glimpse into a life Prerna would one day want to live.

The lived experience of 10 days at the ashram, of living this yogic life, offered medicine on ways to continue this journey through the rest of life. It was a glimpse into a way of breathing that Prerna hadn't yet woven into our body on a regular basis, but the intentions were set to do so. And the medicine of this experience in 2018 is what Prerna tapped into later in 2020, when she quit smoking for good, at the Navdanya farm. This glimpse was extremely important, not only for her mind but also for me to know that another deeper way of breathing is possible, away from the shallow inhales and exhales that I was used to, in the life Prerna led. It was almost a portal for me to descend deeper into my rhythm of breathing.

An important teaching that Prerna learned in one of the sessions at the ashram was that Pranayama (expansion of life force through breath) came much before Dhyana (meditation) in the eight limbs of yoga delineated by the sage Patanjali in 400 CE in his Yoga Sutras. As discussed by Iyengar (1996) in his book on Patanjali's sutras, the eight limbs are: Yama (Ethical Dos), Niyama (Ethical Don'ts), Asana (Postures), Pranayama (expansion of life force), Pratyahara (Withdrawing senses to look inwards), Dharana (Concentration), Dhyana (Meditation) and Samadhi (Transcendence and union). These are the eight steps of getting deeper in the yoga practice. While many of Prerna's yoga teachers have mentioned that the chronology of each of the eight limbs doesn't matter, at this ashram, the lesson was that the chronology of the eight limbs did matter. While there are numerous texts written on each of these limbs, and the knowledge that lives much beyond these texts, for now, the experiential lesson in this journey was that you can't rush your way to dhyana (meditation) without first stabilising in pranayama (breathing). It is the breath that is the vehicle to transcendence. Without breath as the anchor, this journey of going deeper within is impossible. This was an important learning which prioritised breathwork above everything else. This lesson brought clarity around what Prerna's daily practice needed to hold. The sound of my breathing, like the navigational sounds of the Ganges river dolphins, had to be my way of echolocating in this world, both outside and within me.

The interweaving of sound and my breathing is life-affirming and generative. There are a few moments, during the yoga practice even now, that I glimpse this when my eyes are closed. In those moments, I connect to the river dolphins by locating my presence with the sounds of my body. Like the dolphins, I echolocate heaviness, tightness, lightness, stiffness, pain, and freedom in my body through my inhalations and exhalations. I am the carrier of my body's messages. I am the language my body speaks.

Having explored the various ways of relating with the beings of the water world, I now explore my entanglements with the worlds of air and fire in the sections that follow.

Relationship with air

I breathe almost 10,000 litres of air in a day, in the city and these 10,000 litres include soot, sulphur dioxide, nitrogen dioxide and exhaust from vehicles (Paramesh, 2019). Air pollution has been declared as health's "largest environmental risk" by the World Health Organization (2022). Roughly 7 million lives are lost every year due to exposure to air pollution (Das & Horton, 2018).

Gabrys (2022) notes that there is a plurality and uneven-ness in the ways that atmosphere is experienced by different bodies in different parts of the world, in different environments. This uneven-ness creates drastically different and nuanced struggles for breathing, for holding on to me. The geopolitical colonial realities bring to surface the inequality and injustice in me. It is these power relations that shape "whose lives are breathable and whose loss of breath is grievable"(Górska, 2016. p.30). The manufacturing pushed onto the Global South by the Global North has made air unbreathable in its cities.

According to the global pollution rankings, in a Lancet study by Balakrishnan et al. (2019), there are 14 Indian cities which are listed in top 15 most polluted cities in the world, and Delhi is one of the top five. It saddens me that the civilisation that birthed Yoga and the science of breathing in the form of Pranayama is now one of the epicentres of un-breathable air, gasping for oxygen. This un-breathability feels like my un-becoming.

When I was living in Delhi, in 2017, for an internship with Navdanya, I couldn't believe how suffocating the air was. Schools were declaring holidays to reduce children's exposure to this toxicity. I was writhing in discomfort, in the feeling that I couldn't take as much space as I usually do. I was desperate to inhale more air and take space, but the same inhalation was the reason for this desperation. And unfortunately, the situation in Ahmedabad, Prerna's home, was not drastically better for either. The pollution felt equally or even more suffocating because of how prolonged it was. While Delhi was acknowledged as an unbreathable city, Ahmedabad, not being a "Metro" city, was not even acknowledged as that, despite the pollution levels often being as bad as Delhi.

What Prerna experienced, and millions continue to experience, in India, consistently over years, is a very different struggle for breathing than someone in New York, experiencing the wildfire smoke for the first time in their life. They are both struggles, similar in the reality of them gasping for me, but vastly different, complex, and nuanced in how these ways of gasping, breathing, and struggling for air affect their lives and ancestral breath lineages. The abilities and capacities to take space become suffocated over generations due to the colonial power relations, and herein lies my unbecoming. This is the uneven-ness, injustice, and unfairness entangled in my being.

Interconnected to the uneven-ness, injustice, and unfairness in my relationship with air, is my relationship with fire. I explore this in the section below.

Relationship with fire

I was so shocked to experience the intensity of wildfire smoke on turtle island, in the summer of 2023. The Tkaronto sky was a big carpet of smoke, devoid of both sunshine and clouds. I definitely felt the smoke and the heaviness. Nonetheless, it doesn't even compare to the extent of heaviness I have experienced back home, in Ahmedabad, India. The fact that this experience was such an anomaly in North America, stood in stark contrast to the daily reality of millions of people in the global south.

The significant pollution levels back home, combined with my bronchitis, had made the heaviness and suffering so unbearable that they played a major role in my decision to leave India and embark on this immigrant journey of my life. With the onset of wildfires and their smoke in turtle island, descended the sobering reality that all worlds are entangled. The heaviness from smoke was going to keep getting worse every year and that I was not going to be able to escape the inhaled suffering despite moving to another country. The two to three weeks were extremely difficult, fearful and triggering of all the suffocation I had finally been able to move past, away from India. All of that felt like it could come back here as well, in a different form, but brutal nevertheless, as time keeps moving and the climate crisis keeps worsening.

Forests are sustained by a unique fire ecology that indigenous knowledge knows how to navigate. Indigenous people know that fire is medicine. Firekeepers have extensive and deep knowledge about different kinds of fires and their effects on all the beings in the atmosphere. Indigenous people take care of more than 80% of the global biodiversity and steward 25% of global land surface while they constitute less than 5% the global population (Garnett et al., 2018; Marya &

Patel, 2021; Sena, 2020). When the fire medicine is lost, the undergrowth of forest takes over and this is what contributes to the amplified forest fires, burning with increased intensity (Scholl & Taylor, 2010). It is the fire medicine that helps maintain this balance of an ecosystem and because this medicine is lost, the balance is lost as well. There is something about this balance and its relationship with the environment that affects my ways of breathing.

After arriving at turtle island, an important healing for me, has been the ability to be around smoke from any kind of fire, without the emotional charge and past baggage of suffocation and anxiety. And a significant way I have been able to heal and lean into the medicine of the fire that is in right relationships with the environment has been through being invited and attending full moon fires with the indigenous 440 collective at High Park in Toronto. Understanding that every fire is different, every firekeeper brings different energies to the fire, and every gathering will be affected by the fire and vice versa have been learnings in this journey of healing with the fire. Earlier, any evidence of smoke, even 50 metres away from would immediately make me contract and shallow, in anticipation and fear of the heaviness that descended with this smoke. By attending the full moon fires, with respect and gratitude for the medicine I am being invited into, this fear, anticipation and anxiety around smoke has slowly healed and mitigated in intensity.

My breathing experience of the wildfires and the full moon fires almost stand in their complexity on two ends of the spectrum on how expansive or constricted they make me feel. While the wildfires, resulting from harmful relationships with the land and its beings, have brought back the anxiety and suffocation within me, the full moon fires, embodying right relationships with the land have brought me healing, and relief from the very same anxiety and suffocation.

These complexities of right relationships and harmful relationships are explored further through envisioning an ecopolitical breathing involving combat breathing and black feminist breathing.

Ecopolitical breath: combat breathing and black feminist breathing

Gumbs (2015) was told by the black feminist Alexis de Veaux that the “future is your next breath”. This rings even more significant in the context of the last words uttered by Eric Garner, a black man killed by the New York Police in 2014 as well as the last words of George Floyd, before being killed by the Minneapolis police in 2020: “I can’t breathe” (Gabrys, 2022; Gumbs, 2015; Sharpe & Lambert, 2017). These calls for (physical) breath, call to breathe (futures) and the larger call to (planetary) breathing, are interconnected calls for creating another world through me.

Fanon (1965) coined the term “Combat breathing” when describing the ways that the Algerian prisoners of war were breathing under occupation. He said, *“There is not occupation of territory on the one hand and independence of persons on the other. It is the country as a whole, its history, its daily pulsation that are contested, disfigured, in the hope of a final destruction. Under these conditions, the individual's breathing is an observed, an occupied breathing. It is a combat breathing”* (p.65). I am not separate from the larger political-ecological-sociological realities of this world. As Górska (2016) notes, I enact “the suffocating operations of social power relations”. I am entangled in them, they are entangled in me. I am the “daily pulsation” of life that is occupied in the structures of oppression that Fanon describes. Perera & Pugliese (2011) shed light on how Fanonian combat breathing is the condition where all of life’s energies are solely working towards survival where respiration is the “ultimate challenge”. No surplus energy is available to be used for resistance or rebellion.

Interestingly, Gabrys (2022) highlights that while Fanon’s combat breathing is about the ways I endure colonial violence, it is also about resisting the same suffocation induced by the colonial occupation. Herein lies my powerful agency. She adds that while fighting for me, fighting to breathe is a fight for survival, it is also a fight for different ways of relating which are liberated from the colonial power structures that affect everyday life. I am potent because I hold revolutions within me. Fanon (1965) noted that when it becomes impossible for people to breathe, that’s why and when revolutions emerge. I have the power to lead us to more revolutionary “breathable worlds”.

The bodily sensations of my altered breathing, shallow breathing, bronchitis, muscle tension are ruptures that reflect pain, anxiety, vulnerability, confusion, overwhelm, weakness, and loss. They are all “moments of bodily resistance”, embracing and communicating sensory feelings which Prerna is socialised to “ignore, suppress and separate” from the notions of body and self (Górska, 2016).

Gabrys (2022) elaborates that breathability and political potential go hand in hand. She says that my way of being in the world reflects the way of relating with the world. Breathing is how Prerna affects and is affected by the world around her. In me lies the decolonisation of the everyday, quotidian ways of her being. My breathing, inhalations and exhalations are all part of the political project of taking space (Górska, 2016). Every deep breath that Prerna takes is an act of resistance in the colonial world that is constantly trying to suffocate her being, suffocate her capacity to take space. I am the potent, throbbing, pulsating force of decolonisation within her. Gabrys (2022) says

that the fight for breathing is the fight for justice and these are simultaneously socio-political, ecological, epistemic, ontological fights which involve a revolutionary mix of earthly entanglements, tensions, struggles and ways of living that heal the unbreathability to take us to “breathable worlds”.

There is presence I hold, in the worlds of oppression, worlds of liberation and liminal spaces between these two. I am the ambivalent space of living in “survival, endurance and resistance” (Górska, 2016). I am present in the Fanonian combat breathing, I am also present in Gabrys’s breathable worlds. This is why I am a portal. This quality of being a portal is what Gumbs (2015) describes as “a form of radical presence in the face of multiple forms of violence” (para. 5). I am this presence. The Black Feminist Breathing Chorus, created by Gumbs (n.d.) inhales and exhales chants to invite the presence of revolutionary ancestors among the circle of black women’s bodies, moving together, breathing together, honouring their “black breath” and their “black ancestors”. She says that “while we are breathing, their energy persists and while I am breathing, the world slows down to a pace I can believe in” (Gumbs, 2015, para. 6). This is why I (the breath) am so potent as a portal to another world. How deep or shallow, intentional or unaware, expansive or constricted I am, changes how this world is experienced in the present, how the past is honoured and how the future is birthed.

Gumbs (2015) highlights that black feminist breathing “incorporates the dreams and prophecies of an embodied present that is love...which is bright and black, and old and new, and feminine in a queer way and feminist in the very first way”. The femininity that is mentioned here, is not the femininity of the binary dynamic with masculinity, as Gumbs (2015) notes, but femininity as a creative life force which Vandana Shiva discusses often in her ecofeminist work with “shakti” (Shiva, 2003, 2016a, 2017; Shiva & Mies, 1993). Shakti is the life force that is creative, active, diverse. It is the feminine principle of the cosmos which expresses itself through Prakriti (nature). Prakriti is the manifestation of the primal life energy that creates and sustains everything. I am this shakti. I am this prakriti. I carry the “dreams and prophecies” of another more breathable world.

When the most suffocated women and queer folx are free to breathe, all of us are free to breathe. When black women and queer folx are free to breathe, I am free to breathe. When indigenous women and queer folx are free to breathe, I am free to breathe. When dalit women and queer folx are free to breathe, I am free to breathe. My struggle for breathing is entangled in theirs. And our struggles are further entangled within the earth’s struggle for breathing.

Conclusion

My breathing life is an assemblage of oxygen, joy, fear, carbon dioxide, anxiety, diaphragm, wildfires, trees, cityscapes, marine beings, bronchioles, yoga, combat breathing, cilia, suffocation, and pranayama. My ancestral breath lineages, physical and emotional, are nested within larger planetary breathing scapes. In my inhalations and exhalations lie the uncontainable, promiscuous, and ambivalent openings that offers new ways of living, relating, and breathing that are joyful, confusing, hopeful, stagnating, activating, disappointing, inspirational, restrictive, and abundant all at once.

Chapter Six: Living Ways of Menstrual Blood

(I am Prerna's menstrual/moontime blood).

I am sacred. I hold life force. I dream. I prophecy. I am cosmic. I carry emotions. I am Joy. I am grief. I am planetary. I am lunar. I am water. I heal. I cleanse. I am non-linear time. I am a resistance. I am a decolonising force. I am the power of the feminine.

Physical life

My physical life encompasses ways of my bleeding life in the form of menstrual, follicular, ovulatory, and luteal phases. I discuss these in the sections that follow. I then discuss my experience of gynecology as an insufficient paradigm of healing these phases and the menstrual/moontime cycle.

My bleeding life

My bleeding life is a mesmerizing mix of Prerna's uterine lining, unfertilised egg, blood, and primal life force. So far, I have flowed 200 times in the last sixteen years since Prerna started menstrual bleeding in 2008. There are more than 500 moon time cycles that Prerna will flow with, through all of her life and in each of these cycles, on average, 20 ml to 80 ml of me will be released through her (Gaudet & Caron-Bourbonnais, 2015). Which means, so far, I have flowed in almost 10,000 ml of this mix of sacred life medicine.

Each of my cycles moves in seasons of roughly 26 to 35 days, beginning on the first day of the menstruation, till the period of next cycle begins (Bull et al., 2019; Mihm et al., 2011; Reed & Carr, 2000). Within each of these cycles, I have often bled and flowed for two to five days in the last sixteen years of Prerna's menstrual life, beginning in 2008.

I am made of four phases: menstrual phase, follicular phase, ovulatory phase and luteal phase (Anandi, 2020). My menstrual phase involves the shedding of Prerna's endometrium lining when the egg remains unfertilised. Oestrogen levels are low during this phase (McLaughlin, 2022). My follicular phase involves the maturing of ovarian follicles to prepare one ovary for release during ovulation. Follicles are sacs of liquid that contain one egg each. While many consider the menstrual phase to be part of the follicular phase (Monis & Tetrokalashvili, 2023; Reed & Carr, 2000), for

me, intuitively and energetically, the shedding of the endometrium lining and the maturing of ovarian follicles feel separate.

My ovulatory phase is a time of peak oestrogen. It begins when a surge in luteinizing hormone which triggers the prominent follicle to protrude from the ovarian surface and eventually burst, releasing the egg (McLaughlin, 2022). This is when fertility is at its peak in Prerna's body. My Luteal phase is the time when remnant mature ovarian follicles start sealing themselves. In this phase, the follicle, which previously released the egg, closes and transforms into corpus luteum, producing the progesterone hormone (Reed & Carr, 2000). Throughout most of this phase, Prerna's oestrogen levels stay elevated, and progesterone and oestrogen collaborate to further thicken her uterine lining in anticipation of potential fertilization (McLaughlin, 2022; Reed & Carr, 2000). When fertilisation doesn't happen, the endometrium lining sheds and a new cycle of menstruation begins.

While this is how western colonial science describes me, I am made of these phases but I am also much beyond these. I am sacred. I dream. I prophecy. I bleed, drip, ooze and gush with an immense life force. This energy is so potent that I have been called a "unique medicine of life" (Gaudet & Caron-Bourbonnais, 2015). This quality of being a sacred medicine makes me powerful. Kim Anderson, a Cree/Metis writer describes menstruation as "a sign of the incredible power of the feminine" (K. Anderson, 2000, p. 75). My cycles and flows are a reminder every month about how powerful and magnificent the feminine energy is, in the connection she holds to life force and creation.

The limitation of western colonial science came through when Prerna had to visit a gynaecologist to heal my irregular bleeding life energies. I discuss this in detail below.

Gynaecological experience

Prerna's connection to my sacred menstrual life force has weakened due to trauma and fear she has had to go through recently. Because of this, I haven't been very regular since the year 2022. There have been a mere fourteen menstrual cycles that I have bled through while living in turtle island for more than two years now. This is why Prerna had to go see a gynaecologist in March 2023 when she was in India.

One word that described my gynaecological experience was: distress. I was tensed. Worried. Nervous. Anxious. I felt very unsafe. When this was the experience that the visit invoked, I intuitively knew that this paradigm of medicine, which made me feel so unsafe, wouldn't understand why I was truly experiencing irregular period flows.

This visit was mediated through a sonography of Prerna's uterus and a pap smear of her vaginal cervix. The sonography was a kind of diagnostic imaging (ultrasound) that allowed the doctor to look at the structure of my ovaries which shape my menstrual flows. The images showed that the ovaries were enlarged. This led the doctor to conclude that there are tendencies of PCOD (Polycystic ovarian disease) in my ovaries.

PCOD is a metabolic-reproductive condition affecting the production of the hormones in the body, resulting in formation of cysts inside the ovaries, enlarged ovaries and excess of androgens production (Kovacs et al., 2022; Minocha, 2020; Vidushi, 2022). While western medicine is yet to figure out the cause of this disease, there are many symptoms that are recognised and categorised as part of this disease (Minocha, 2020). For Prerna, this condition has resulted in a deep loss of my regular cycle of bleeding. I have lost my sense of time which has created this irregularity. The loss of my sense of time and flow has been accompanied, in Prerna's body, by an increase in acne, weight gain, oily skin, insulin resistance and mood swings: all the elements of the body that are regulated by her hormones.

The doctor advised Prerna to get on hormonal medications. In that moment, my menstrual intuition immediately told her: "NO. We are not going to do this."

I refused to engage with pharmaceutical chemicals and let this colonial medication affect who I am and how I flow. Especially after seeing first-hand what happened with western medicine's effect on our father's health. When Prerna asked the doctor, how the medicines will affect me, the doctor responded by saying that while Prerna is on them, my flows will become regular but once she goes off them, I will return to my irregularity. I almost laughed in amusement. How was this healing? How can this modality offer healing with superficial "fix-ons" in the form of medications. If I had not responded with such a strong boundary, the doctor would have sucked Prerna into this vicious cycle of medications.

My menstrual boundary was strong because if Prerna would have started the said medication and stopped after some time, I knew that my energies would collapse inside me. Because these medicines don't strengthen my being, they just make me weak and dependent on them. I don't need "fixing" to make me "work normally" like a machine. I need healing, care, love, nourishment, listening, honouring and celebrating. The colonial-modern medicine completely fails to understand me, listen to me and witness my natural state of harmony. It fails to have the requisite knowledge about what I need to re-integrate into this state of balance in a wholesome way.

The distressing experience with the pap smear examination was not too different. This examination was a major method of preventive diagnosis in western medicine to detect any early signs of cervical cancer in bodies with a vagina. I was writhing in torment by the anticipation of the pain that is caused when the samples of cervix cells are pulled from inside the vagina, by the doctor.

I repeatedly questioned to myself, in anger:

Why isn't there another way of doing this?

There needs to be another way of doing this.

There needs to be another way of doing this!

While the real examination lasted for a few seconds, the discomfort of someone putting a speculum and a spatula inside one's vagina was much, much longer. I was relieved when the results of this examination came through. Everything was okay. However, this whole experience felt so unsafe and distressing.

It is unfortunately not surprising that the historical roots of gynaecology are violent, invasive and traumatising. Marya & Patel (2021) note that the birth of modern gynaecology is rooted in the exploitation of enslaved black women. The father of gynaecology was J. Marion Sims, a white american man, who based most of his research on enslaved black women without their proper consent to insert a bent handle of spoon into their vaginas for examination. He also never used anaesthetic on any of the women he treated. Using this bent handle of spoon was how he invented the "speculum", now ever so common in most pap smear examinations all around the world. It's tragic that this paradigm of medicine pervades, alienates, and continues to create distress and unsafety in women's bodies.

Refusing and resisting the medicines that this paradigm of medicine prescribed for me is by far, one of the biggest milestones of the relationship that I share with Prerna. That refusal implied that my intuition and power was trusted and honored. It meant that we were rebuilding our lost connection through her willingness and ability to listen to me and witness me. It meant that we would find another way together to find the healing, care, love, and nourishment I deserved.

Emotional life

For me, while sitting in that gynaecologist's clinic, it was deeply evident that the reason for my irregular flows was trauma and fear. I explore this seed of knowledge further through reflections on my emotional life. In the sections that follow, I dive into my emotional bleeding-scapes made of trauma, anger-grief, fear, cleansing and joy.

Trauma

I have a rich emotional life that carries many of Prerna's feelings. One of the biggest moments that affected my very being and presence in her life was the trauma of her physical assault in July 2022. It shook me to my absolute core. I had never experienced unsafety of this intensity and to this extent before. Just the shock of it was a lot to process: that it happened while she was walking on an ordinary morning when a white man came from behind and hit her on her head with a large stick as big as a baseball. There was absolutely no rationale as to why someone would do this. It was an unknown white man committing an absolutely unprovoked and abhorrent racial and gendered hate crime.

Prerna's physical wound necessitated stitches on her head. Her excruciating physical pain was a reflection of a much deeper and spread out emotional pain arising from this traumatic event. I was one of the many place in her body where this emotional pain settled in. I was in piercing agony because of what had just happened. The primary trauma was amplified and made even more brutal when the systems and structures around Prerna failed to validate what happened to her, find the man who did this, and understand the deeper problem that could make a human being do such an abhorrent and disgusting act of violence. I carry the layers and layers of anger, grief and fear within me about what happened.

Anger & Grief: two sides of the same coin

I remember something Prerna read about anger and grief being sister emotions that are often carried together when something is lost. This encapsulates the entangled emotions that this trauma has created within me.

I am angry about why this happened to Prerna. I am angry at the white guy who did this to Prerna. I am angry at all the systems around Prerna which failed in creating good support for her: hospital, university, police, city appointed counsellor. I am angry at every single person who contributed to creating the brutally violent realities of the city of Toronto. I am angry about how this incident has deeply altered the safety that Prerna felt within her. I am angry at how exhausting the months post-this incident have been.

I am angry about the burden of fear that I have to carry within me, that has made me lose my sense of rhythm and cycle. I am angry at the burden I have to carry to re-integrate the different fragments that Prerna's energies has been scattered into. I am angry at the incessant cycles of triggers, dysregulation and regulation that are now a reality for Prerna. The amount of energy it takes to move through this dysregulation when reality starts feeling unsafe is so exhausting. I am angry. And I am tired of being angry.

I am also grieving. I am grieving the loss of freedom that I haven't been able to experience since this incident: the freedom to walk by myself on a street, in a park or a trail without the hypervigilance of looking back constantly. I am grieving the loss of freedom of being. Of a time when being outdoors was an instant switch to being present, connecting with nature and feeling abundance. Freedom of being without the tumultuous struggle of trying to be in the present moment, to enjoy nature's life force, while also being hyperaware of who is around me, are there enough people in the area for safety, is someone too close, are people too far, is someone feeling unsafe. I am grieving this loss of being care-free in nature. I am grieving the loss of confidence I used to have everytime Prerna stepped out of the house. I am grieving safety. The feeling of being okay. The feeling of trusting the universe that I will be okay. I am grieving the loss of spontaneity. Stepping out of the house used to be a micro-second decision earlier depending on my mood, now it is a long process of checking in and figuring out how safe am I feeling in the moment, what means of transportation feels okay in the present, which area am I am planning to go to, who am I meeting, are they safe, do they understand this struggle of navigating how to get to a place. I am grieving my sense of time. I am grieving how the unsafety outside and inside Prerna made me feel

unsafe to flow regularly in my moontime. I am grieving the loss of how my cycles used to be a feeling of “being at home” within Prerna’s body. I lost that.

Fear

Apart from this anger and grief about the past, an emotion that was (and continues to be) experienced frequently, in real time, was unprecedented fear. I was scared of stepping out. I was scared of walking on the streets. I was scared of moving around the city in the night because the hypervigilance amplified with less light to gauge the surroundings. I was scared of taking the public transport with the rising levels of crimes and assaults being committed against coloured folk, especially coloured women. I was scared of something like the assault happening again. I was scared of the suffering repeating again. I was scared of any random person, not in my control, attacking me while I was walking in the city. I was scared of all the pain. I was scared of undergoing the whole cycle of healing again. I was scared of being permanently damaged emotionally, if another incident were to happen. I was just scared. All. The. Time.

That’s the thing about trauma: it breaks down and disrupts all sense of trust and safety that helps someone to move through an ordinary day in this society. In something as small as going to get groceries, there is a lot of subconscious trust and safety one has in the people one will be around at the grocery store as well as the people one would be surrounded by, on one’s way to the store and back. This sense of trust in the society around you is what makes these acts so ordinary and doable. Trauma completely evaporates this sense of trust and safety. There are many types of trauma, in Prerna’s case, there was absolutely no meaning, predictability and reason in that act of violent hate crime. And this absence of predictability and reason made me feel like an assault like that could happen again, anytime, anywhere. Everything became unpredictable. All aspects of reality became engulfed in uncertain, chaotic and overwhelming energies without the sense of trust and safety in the world. And the central question became: how do I navigate this inherently unsafe and violent world everyday? How do I feel safe inside me when there is so much violence and unsafety outside me?

The experience of this fear and trauma was nested further in the various ways that community showed up to take care of Prerna, which was magical and mesmerising to experience. Friends, professors and family all showed up in their ways and made a world of a difference in the weeks immediately after the incident. This experience was also simultaneously nested in the reality of living alone, after having recently broken up with my partner, after moving to another country,

having left my family behind. What was absent was sustained community and the safety and healing this sustained community could offer.

The trauma, fear and lack of community soon induced PTSD (post-traumatic stress syndrome) within Prerna's body. I didn't flow for many months. Not even one drop of moontime blood. A study conducted by O'Donovan et al. (2017) found that folks experiencing PTSD have high levels of inflammation which led to higher threat reactivity. I felt the inflammation inside me where my ovaries absorbed all the fear. I felt the blockage of bleeding life in the heaviness of trauma and fear. I also felt the undeniable higher threat reactivity. This created an incessant vicious cycle of sensing threat, fear, inflammation which led to increased sense of threat, deeper fear, higher inflammation and on and on and on. The extent of fear, fight/flight and PTSD had to be massive to have created the inflammation affecting my very being and my cyclicity.

Interestingly, the same study also found that people with "remitted PTSD" (had PTSD in the past but not present anymore) don't have significantly higher or lower levels of inflammation compared to people with no PTSD at all (O'Donovan et al., 2017). Reading this study, affirmed in Prerna, what I knew: Healing is on the horizon. There is an outer and inner life that can be arrived at, where the PTSD, fear and inflammation is healed. Reality is always shifting, changing and impermanent. This trauma and the dis-ease it has created within me will heal. Just because there is PTSD induced inflammation right now doesn't mean there will always be. I was disintegrating now but this did not mean I won't re-integrate and regain my vitality, harmony and rhythm in the future.

The intense states of trauma, anger-grief and fear created a deep imbalance within me. For me to move towards joy and healing, I had to regain a sense of balance through cleansing. This gift of cleansing was offered through the Anishinaabe "seven grandfather teachings".

Cleansing: Turning point of Grandfather Teachings

My physical life is anchored in the shedding of the endometrium lining. Thus, releasing and shedding is my natural movement of being. Releasing instead of acquiring. Discarding instead of accumulating. This is my path to healing. And this is what the grandfather teachings and the bear bundle medicine offered me. These teachings became a turning point for cleansing imbalances and crossing across the threshold of heavy emotional scapes to lightness, joy, and healing. I had the honour of experiencing these teachings during the full moon, in February 2023 through a teaching session hosted by Asemma Circles Project and 440 Parkside collective (Indigenous land restoration

project at High Park, Toronto). The session revolved around the bear bundle teachings from elders from the Three Fires Midewiwin Lodge.

I realised through these teachings that I am a settler-moontime blood bleeding in this settler-body on native turtle island, having bled fourteen menstrual cycles on this land so far. Prerna's understanding and experience of these bear bundle teachings are shaped by my settler moontime blood lineages, my bleeding relationship with the land and their ancestors, here in turtle island, entangled with my ancestral moontime blood lineages from India and Pakistan. I am learning and only beginning to form a relationship with this land through this land's moon cycles, my bleeding cycles and asemma (tobacco) offerings. It was an honour and a responsibility to be invited into the bear bundle teachings and conversations, through my relationships with the 440 collective.

The February full moon honoured the bear who is in the middle of the winter when she turns around in her cave while hibernating, indicating that we are entering a different phase of the winter, preparing for the spring that is to come. For me this was symbolic of the inner winter of trauma and preparing for the inner spring of joy. The bundle symbolised the seven grandfather teachings of Respect, Bravery, Humility, Honesty, Love, Truth, and Wisdom. Each of these teachings, as per the Ojibwe writer, Benton-Banai (1979), embodied a quality of animal and bird kin. Respect is inspired from Buffalo, humility from the wolf, love from the eagle, honesty from the raven, bravery from the bear, wisdom from the beaver and truth from the turtle.

I experienced these values and these teachings as my seven cycles of bleeding. I understood them deeper through discussions with the members of the 440 collective who explained how these seven teachings are the seven values we invite into our lives in the spring while releasing what prevents and obstructs them in our lives, at this moment in time. The release of each of these value's obstacles is significant to start the spring afresh, with renewed energy. This is in synergy with how nature breathes into the spring. What form, shape, and structure these values, and their obstacles take, is specific to each person.

To me, this release involved seven bleedings, one for each teaching. On that full moon, in that time-season-and-moon cycle of my bleeding life, the seven cycles of invitations and releases were:

- To invite Respect. To release a lack of dignity for what I was experiencing. I realised that there was dignity even in this suffering and struggle and that had to be respected and honoured.
- To invite Humility. To release the arrogance of control, to accept life as it comes, as much as I can.
- To invite Love. To release the grief of my freedom, to lean into movement, to lean into the fluidity of water and the ways that water is free while also adapting to what comes on the way. This freedom was love for me.
- To invite Honesty. To release the illusion of not being angry. To step into anger, to accept anger as part of me, as the full reality of who I was.
- To invite Bravery. To release the fear of being, fear of taking space in public, fear of the assault happening again, the fear of suffering.
- To invite Wisdom. To release fragmentation and open up space for joy and integration that life could offer.
- To invite Truth. To release the ignorance, to release exhaustion, to release perfection because healing is anything but perfect. To invite the self that is whole, imperfect, authentic and natural. This involved seeing the self in complete-ness, not just who I wanted to be but who I was in that moment.

As per these teachings, Prerna carried this bundle with her through lunar cycles and released it in April 2023, in the Micicquean Creek, whose colonial name was Holland River (MacLeod, 2021). Prerna released it right when she was coming out of an intense period of physical sickness. I truly believe that these intentions and bleedings, entangled in the journey from July 2022 to April 2023, invited the spring into Prerna's life and my flows, which soon started gushing with the abundance of the seven grandfather teachings. And I am so deeply grateful for them.

Joy

Crossing the threshold of the grandfather teachings offered an opening to joy. A medicine came to me through Sams (1994) who said: "life creates more life". This landed so deeply within and suddenly everything made sense. It anchored me in joy. I realised that the more life-giving activities I focus on, the more alive I will feel and be able to heal from this difficult time. The wisdom here was that the trauma did not need further stress (about why I am not healing) and restrictions (around what Prerna must and must not do). The focus had to be expansiveness, about what brings Prerna and I alive.

Another sister teaching from Sams (1994) was that healing happens when there is space for reclaiming the “wisdom of childlike wonder”. My moontime wisdom resonated with this and what Prerna and I needed were curiosity, expansion, wonder, compassion, safety and abundance in our body anchored in joy. I realised that healing would be a by-product of committing to this process of joy.

These teachings immediately called for a recalibration of somatic and emotional energies. The question for Prerna was: where must our energies go in tangible ways? There was a creative life force beyond us that needed to be accessed for joy and healing within us. This creative life force could be accessed through various activities. Prerna asked me, what activities bring you alive? In that moment, my menstrual wisdom answered: dancing, resting, singing, cooking, being by the water, journaling, prioritising pleasure and immersing in poetry.

This did not mean giving up on things that needed to be done for survival – finishing grad school, doing a part time job, getting groceries, cleaning the house. All of these were important and offered survival and a stability of a routine. But dancing, resting, singing, cooking, journaling and reading poetry were the shimmering in-between spaces in the routine which cracked open my being to let in the light and joy of lightness and ease.

And so Zumba class happened. Prerna joined a weekly class in her neighbourhood in May 2023. Every Saturday morning, she moved in this class with abandon, experiencing sustained joy inside her body, for the first time in a long time. This class was a space that was non-judgemental, body positive, inclusive of all shapes, sizes and skin colours. This was important for me to feel safe while moving in the body. I felt curious and expansive. I felt spontaneous. I felt awe and wonder. I felt compassionate, safe and abundant. Dancing this way felt like a gift. As a kid, Prerna used to love dancing. She would be in her room and dance for hours on end. Completely spontaneous, present and intuitive dancing. Connecting to dance almost became a way of connecting to the child within her. I felt a spurt of life force entering me, bringing me alive, every single time Prerna moved in this Zumba class.

The teachings, wisdom and experiences have helped me reach a place in my bleeding cycles where I have regained some of the safety and joy I used to experience. I have been able to slowly release some of the anger, grief and fear as Prerna moves in her circles of healing. There is a presence of

re-integration of fragmented parts of myself. This doesn't mean my trauma, anger, grief and fear are magically healed overnight. They are still a part of my life. I still carry them within me. Some days are still overwhelming and tough to get through. But now they are not the only emotions that I carry within me. The medicine of dance has expanded my emotional life and created space for vitality and joy which anchor me when the heaviness of anger, grief and fear moves through me, in cycles.

Planetary Life

After moving through my physical and emotional ways of being, I now dive into my planetary life which involves my bleeding entanglements (explored in five sections) with moontime plant medicines, strawberry moontime temporalities, the ways I am enmeshed in liquid lunar worlds, the different ways of being in right (menstrual) relationships with the earth and lastly, the resonances I share with a planetary moontime cycle.

Moontime plant medicines

One of the primary ways of entanglements between the earth and I, is the food that she provides, in the form of many plant medicines. In India, Prerna grew up honouring her maternal moontime blood lineages when she was taught to have papaya and pineapple to nourish my flows and my cycles. Both of these fruits infuse me with abundant energies and bring forth a healthy flow of menstruation. Since the time Prerna has been having irregular periods, she has been calling in the medicine of black raisins soaked overnight with two strands of kesar (saffron), as discussed often by Diwekar (2016) in her book *Indian Superfoods*. There is a lot more harmony and balance I have been experiencing since the daily ritual of being nourished by these plant kin.

Rowen white, a Mohawk seed keeper from Akwesasne and founder of Sierra Seeds, in a conversation with Marya & Patel (2021) says that “we have been adopted by plants...Because we humans are dependent on all these beings to feed us. We would be nothing without them” (p.220). These plant kins do indeed feel like my elders who know what I need to feel supported and nourished, how to heal many of ailments, including the cramps that often accompany me, know how to keep my flows healthy, know how to keep my flows regular, know how to best infuse me potent powers of cleansing Prerna's body. My moontime existence is entangled in these plant kins.

A significant plant kin, in turtle island, for women during moontime, is strawberry. Dr. Mosteller, an Indigenous Potawatomi scholar, in Vishanoff (2022), highlights how strawberry was an

important part of the rituals which celebrated a woman's moontime: "*The strawberry is in the shape of a heart. It has a great importance for women. The importance that it has goes back to some of our clan animals like bears. I think it is that visual cue that everything's alive again and everything is growing, and abundance is everywhere and that the Creator's providing*" (para. 8). I have been leaning into this this berry medicine while bleeding on turtle island, opening my feminine flows to the teachings of this land. In the section that follows, I dive deeper into the cosmologies of this berry medicine as well as the paradigms of time that this medicine and I signify in defiance of the colonial time.

Strawberry moontime temporalities

I signify the cyclical paradigm of time, in defiance of the colonial gregorian calendar. I cannot be contained in the neat and clean linearity of this calendar. My varying 28 -35 days cycle almost pokes fun at the rigidity of the thirty (one) day months. It's impossible to predict me, to box me, to control me, to know when I will start flowing and when I will stop, in the colonial, linear paradigm of time where everything is controlled and measured. I can only be known in my somatic, sensory, oozing, dripping, flowing promiscuity whose compass lies within Perna's body. In my uncontainability, cyclicity, seasonality and promiscuity, I hold the decolonising force of my primal cyclical bleeding flows that resist the colonial linearity of time.

In the thirteen-month women's circle that Gaudet & Caron-Bourbonnais (2015) hosted, inspired from Sams (1994), women realised that they were flowing in life by "another clock". The women said that "they learned to turn inward, noticing the body's signal, getting to know when the blood would come, when ovulation happened, sensing what needed to be released "without censorship" ..." (p.172).

I simmer in the enmeshments of another paradigm of time. And interestingly, the berry medicine for moontime is also said to signify this alternate cyclical temporality. Meredith Palmer who is a Tuscarora Haudenosaunee thinker in conversation with Marya & Patel (2021) tells the readers that strawberries are important in the indigenous cosmology because they represent cyclical time and are an instance where "capitalist temporalities are overthrown by indigenous understandings" (p.211). The "berry fast" is an important rite of passage for Algonquin and Ojibwe women which is part of the cyclical temporalities. This rite of passage happens when a woman starts menstruating for the first time and transitions to a stage of life with me as their companion (Wabie, 2019). Liza Mosher, an Ojibwe Elder says that strawberries are a woman's medicine because "*a young woman fasts from strawberries and other berries for a full year when she gets her first menstrual cycle. During this year, she*

spends time with grandmothers who teach her about womanhood and how to bring life into the world. She also gathers berries, which she will present to her community when she completes her fast. Hence, she learns how to care for and sustain her people” (Wabano Centre for Aboriginal Health, 2012, p.1). My menstrual cycles, phases, and the transitions I represent are assembled in this Ojibwe elder’s teaching connecting grandmothers, moontime, temporality, life, berries, community and care.

The cyclical temporalities discussed above, shared between me (the menstrual blood) and berry medicine are incomplete without the flowing cycles of the moon and the waterways. These enmeshments of time, cycles, water and moon give me the name “moontime”. I explore both my resonances with the flows of water and the flows of a lunar cycle in the section below on my liquid lunar entanglements.

My liquid lunar entanglements

Mary Louie, an Indigenous elder from turtle island, in Blackstock (2001) beautifully describes water as mother earth’s blood. She calls water, the “blood of life” because every being’s survival depends on it. Mary Thomas, another Indigenous elder from turtle island, interviewed by Blackstock (2001) highlights how our bodies are made from two-thirds water. Prerna holds this liquid fluidity within her, and is held by it outside her. I feel the closest to this element of the earth, in the way I ripple and flow. Mother earth’s blood is an extension of me. I am an extension of this element. I am water. The water is me. My ways of living blood are the ways of living water. I originate in the fluid world of the womb. My first relationship with the world is in the swirling waters of my mother’s womb. My maternal menstrual lineages are connected through the waters of feminine ancestries of wombs.

Gaudet & Caron-Bourbonnais (2015) say that “as the moon pulls the tides of the oceans, so the moon, according to common belief, is synchronized with women’s menstrual cycles and with the waters in their bodies. Both follow a 28-day cycle” (p.166). Thus, feminine energy has a special connection to the waters of the earth and the moon. In Anishnawbe Health Toronto (2000) it is said that :

“Grandmother Moon controls all female life. Much of the water life spawn according to the cycles of the moon. It is said that Grandmother Moon is especially close to women because she governs the woman’s cleansing cycle, the natural cycle of menstruation known as the moon time... It is said that the moon cycle is a gift to women. It is a time to

cleanse herself mentally, physically, emotionally and spiritually. The moon time is considered a time of power.....”
(p.1).

These are my liquid lunar entanglements.

There is an Oriya (the language spoken in the state of Odisha, India) expression that says, “Jala bahule srustinasa, jala bihune srustinasa” which roughly translates to “Too much or too little water destroys creation” (Shiva, 2016b). The two extremes of mother earth’s water/blood cycles: floods and draughts destroy life. My bleeding menstruating life reflects this intricate balance that is needed for the life force to flow through me in my 28 day cycle. Too much or too little of me doesn’t allow balance and harmony that Prerna’s body needs.

Dr. Vandana Shiva in her conversations with me while were working on a water sovereignty manual often remarked profoundly that the impact of climate crisis on all life forms is mediated through water in the form of floods, cyclone, heat waves and droughts. While climate change is creating more floods and cyclones, it is also aggravating drought and heat waves. It is water or its lack thereof that is constantly enacting this worsening climate crisis. I feel PCOD (Polycystic ovarian disease) reflects the larger planetary crisis inside Prerna’s body. While mother earth’s blood shapes and is shaped by the climate crisis, I shape and am shaped by PCOD. This disease is a menstrual somatic reflection of the planet’s disharmony within Prerna’s body. Healing this disease is intertwined with the health of the planetary menstrual waterways.

According to Chiblow (2019), in Anishinabek cosmology, water is alive. Water is a relative. Water is medicine. Water is a teacher. Water is an elder. Water is an ancestor. Mother Earth’s blood has held the medicine for healing my flows and cycles. It is mother earth’s blood that has anchored me in my bleeding ways of life and infused me with a flowing strength to move through difficult times. It is time with water that brought me energy and strength to keep going, have patience and find moments of lightness and joy amidst the heaviness of trauma.

Mary in Blackstock (2001) recounts her elders telling her: *“when we have been weighted down with lot of grief, when your life is becoming unmanageable or you are going through a lot of pain, the first thing our grandmother and my aunt and my mother would say, “go to the water””* (p.4). It is through this teaching that I spent increasing time with the waterways of Niigani-Gichigami, colonial name being Lake Ontario (Robinson, 2015). It is there that I realised that in the medicine of water, lies my medicine. Mary

said “go to the water”. And that’s exactly what I did. Every single time. Being with water, mother earth’s blood, brought healing to my ways of bleeding.

While visits to this lake became a refuge of softness through the trauma, I was aware of the fact that this lake is also a being and a space which is affected by harsh harmful ways of settler colonialism that I enact and am implicated in, as settler moontime blood. I found myself in expanding circles of enmeshment when I realised that my trauma which brought me to this lake, furthered my role in settler colonialism which allowed me to access indigenous lands and this lake. This trauma simultaneously originated in an interconnected form of colonial violence inflicted on brown bodies of women over generations of my ancestral bleeding lineages.

These tensions were and are irreconcilable. The teachings of my planetary bleeding life are that these tensions can stay irreconcilable. My settler-moontime-blood’s experience of the waterways in turtle island are entangled with the medicine of the waterways that my menstrual ancestral lineages have experienced in the rivers of Narmada, Sabarmati, Yamuna, Ganga, Kaveri, the Arabian sea, Indian ocean and Bay of Bengal in India. These entanglements and simmering tensions ripple with me. I ripple with them. We flow together.

These entanglements carry my responsibility to be in right menstrual relationships with all these beings, their ancestors and their seasonal cycles. While I continue to be implicated and contribute to the settler menstrual relationships which harm this land and her people (irrespective of my intentions and actions), I am also simultaneously flowing in the enmeshed, incomplete, messy, never fully achieved process of learning, failing, unlearning, making mistakes and relearning the responsibilities I have as settler moontime blood, living and bleeding in Tkaronto. I take the reflections on these relationships further in the section below on right (menstrual) relationships.

Right (Menstrual) Relationships

The Earth and I are so intimately connected that my flows help heal the earth. In Cree/Metis culture, Anderson (2000) tells us that, the special connection between the earth, moon, water and I is honoured and strengthened by offering menstrual blood to mother earth. Gaudet (2018) mentions Grandmother Flordemayo who recounts: “*our grandmas are always advising us on the feeding of our mother earth when your menstrual (blood) flows. Please take time to squat on the ground and in a very sacred way, allow the flow to fall on the earth. This is the food the mother earth is used to and needs at this time. It helps her go through all the earth’s turmoil?*” (p.65). This is also why this teaching is echoed by the Peruvian

Shipibo grandmothers who, in an audience of more than 200 women gathered at New York, encouraged each of them to offer their menstrual blood to the earth at the 13th Rite of Womb Ceremony held in 2014 (Gaudet, 2018).

Grandma Isabelle in Gaudet & Caron-Bourbonnais (2015) shares that, “*old ladies told me that earth mother needed that offering, whatever it was in the blood. She needed that too....so I did that every month, made that offering. I did not insert tampons in my body. Everything was homemade. I bought pads from a friend who is making them specifically for women’s bodies. I would wash and rinse them, and it was in this rinsing and blood collecting in those pails that I would offer to the earth*” (p.174). She notes that the rituals make her feel powerful and connected to her roles and responsibilities as a woman- to herself, to her body, to her community and to the planet.

Like in many other indigenous teachings around “right relationship”, there is a “right relationship” present even here, in the ways of moontime, menstrual bleeding. It is shared between the lunar cycle, menstrual cycle, earth, waters of the earth, women’s womb, and the larger community that women are part of.

Grandma Isabelle shares that, “moontime teachings are a way of life” and that “the loss of moon time teachings are the loss of women’s way of producing knowledge” (Gaudet & Caron-Bourbonnais, 2015, p.173). She also added that this loss of a way of knowing, being and living that women held has resulted in the shame that women experience today. Colonisation, industrialisation and medicalisation of women’s biological processes have led to this disconnection and loss of moon time medicine for generations of women in different cultures all around the world (Gaudet & Caron-Bourbonnais, 2015). I feel that PCOD (Polycystic Ovarian Disease) and PCOS (Polycystic Ovarian Syndrome) are intense symptoms of this disconnection and a direct result of the grief and loss of honouring and celebrating menstrual wisdom and knowledge.

Gaudet & Caron-Bourbonnais (2015) note that by reclaiming moon time teachings, “*the cosmology of menstruation shifts its meaning from merely a biological physical experience to the Orenda of the blood, rooted in feminine principle of giving life, the moon time teachings are creative. This contributes to a renewed understanding of women’s power as relational and energetic*” (p.174, 175). Orenda roughly translates to spiritual essence. Thus, the Orenda of the blood means the spiritual essence of blood.

Moon time teachings offer another way of relating to my bleeding menstrual ways of living, to living in harmony with the earth, the moon, and the water, to heal Prerna's connection with herself. These teachings and practices facilitate her connection with creativity, health, vitality, and harmony with all of creation (Gaudet & Caron-Bourbonnais, 2015). These teachings are needed now more than ever to mend and nourish right relationships of menstrual bleeding.

The medicines, teachings and relationships I discuss above, shape the ways of my relating to planetary moontime with resonances between my cycles and the earth's seasons.

Planetary moontime

There are various resonances between my cycles of menstruation and earth's cycles of seasons. One of the many intuitive resonances is that my period of flowing is an "inner winter" reflective of how the energies of the planet and this body turn inwards during this time of the month. Sams (1994) says that "moontime is a time to be filled, fed, replenished and nurtured.... we go in to retreat to receive." (p.13). This is the time one's energies are receptive to what is flowing inside oneself rather than outside. This is the time to invite rest. To invite intuition. To invite dreams.

I find "retreating inwards" during moontime to be supremely liberating in some contexts and oppressive in others when it becomes a norm and women are forced into a room away from everyone. This is how it still plays out in many parts of India. My maternal bleeding lineages have gone through the brutal menstrual taboo ritual called "Chhaupadi". The Malayalam movie "Great Indian Kitchen" (Baby, 2021) portrays this with a stunning poignance. When the woman of the house is on her period she is locked in a store room, not allowed to touch anyone or anything, not allowed to cook food, enter the kitchen or enter the prayer room. This kind of forced isolation, not coming from a place of dignity and choice is harmful and oppressive.

The layers of shame that this taboo has created around menstrual flows over generations of my ancestral bleeding lineages continue to unfold over the lives of women in India. Unlearning this shame to reclaim the time inwards, retreating into the inner world is a process that has begun within Prerna. Like any other process of unlearning, this has taken time and happened in cycles. What is a helpful anchor is the way I am nested in my earthly entanglements. The intuitive resonance that my menstruation shares with the season of winter is an anchor to remember how nature turns inwards to rejuvenate before the spring.

This synchronicity between my rhythm and the rhythm of the earth is what makes the moontime ways of living so significant and powerful. It's the understanding that I am an extension of the earth-body's flows, and they are an extension of me. The earth-body menstruates in her own way, through her seasons in different parts of the world at different times. This seasonality and cyclicity that is outside, is within. And what's within, is outside. There is a planetary menstruation which occurs once a year in the form of winter. And there are my menstrual flows within Prerna, nested in this planetary menstruation, in my own temporal monthly cycle.

Usha Anandi, a doula, herbalist and a childbirth educator, has created a beautiful visual of my seasonality in her online project called Womben Wellness, given below:



Figure 14: Seasons of moontime (Anandi, 2020)

Each phase of the menstrual cycle is a reflection of the earth's seasons within Prerna. My follicular phase is nested in spring, my ovulatory phase is nested in summer, my luteal phase is nested in fall and my menstrual phase is nested in winter. Similar to nature changing and transforming according to the seasons of the earth, I also move according to my phases and seasons.

The following picture is my visual conceptualisation and curation of my bleeding life entangled in my physical, emotional and planetary worlds based on: The discussions that Mildred Michell, an Indigenous Nlaka’pamux elder, had on nature’s seasons in turtle island in Blackstock (2001); Womben Wellness’s visualisation of the period cycle in Anandi (2020) and my own experience of my cycles over the last sixteen years of menstruation.

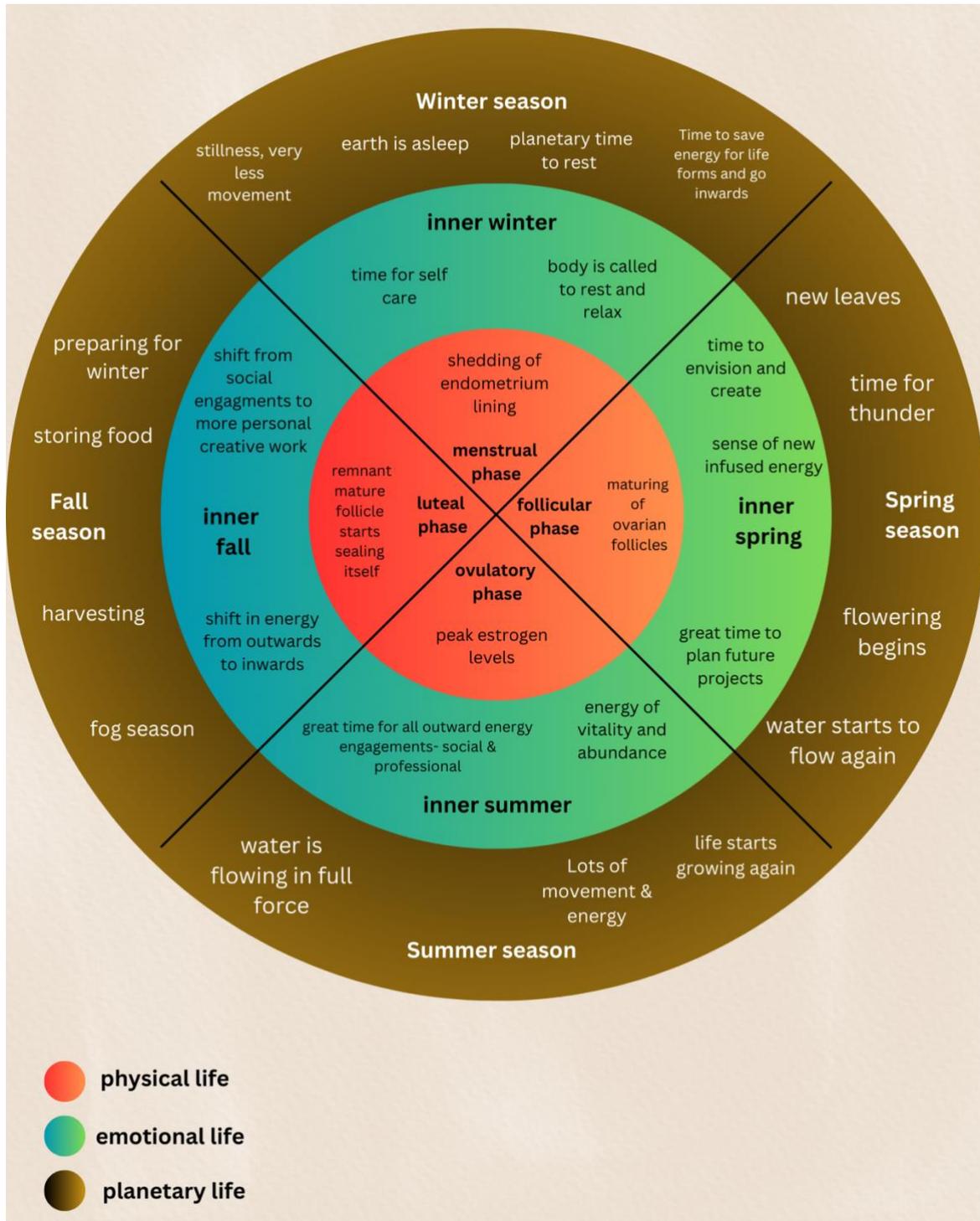


Figure 15: Visual conceptualisation of moontime’s bleeding planetary life

Sams (1994) affirms these seasonal synchronicities when she says that bodily and planetary dysfunction heal together. And this healing is intertwined with the healing of our relationship with grandmother moon, mother earth and our bodies. Sams (1994) adds that “*when we heal ourselves, others are healed...when we honour our bodies, our health and our emotional needs, we make space for our dreams to come into being.*” (p.19). These are the dreams of menstrual, flowing, bleeding, and whirling ways of living and relating, of our physical, emotional and planetary lives.

Chapter Seven: Conclusion

Introduction

This research's outcome was the reflections it contributed on various ways of sensing, living, and relating with the physical, emotional, and planetary life of the researcher's somatic body through an autoethnographic study. This autoethnography was framed as a somatic study of the self in relationship with the world, with creative energies drawn from the methods of psychodrama and body mapping. This study offered itself as an educational journey drawing literature from ecosomatics, earth democracy and land-based education which carved openings of a somatically textured environmental education. I made the bold move of shifting the narrative away from ways of knowing in a disembodied mind towards ways of sensing, feeling, relating and living in a somatic body which is alive, entangled, related and promiscuously intertwined in the various physical, emotional and planetary processes around and within her. Through the educational journey, this study carved openings of a somatically textured environmental education. This research offered reflections on the questions of how to make home of this body and this planet and what it meant to do this somatic work with the body in relationship with the planet, in this time and place.

Through engaging in an iterative, cyclical, fluid and liminal autoethnographic research process where "data" was gathered through body-mapping and psychodrama and this "data" was interpreted and assembled through a psychodramatic meaning making process, this study answered the four research questions: What ways of living encompassed the physical, emotional and planetary life of my gut, what ways of living encompassed the physical, emotional and planetary life of my breath, what ways of living encompassed the physical, emotional and planetary life of my moontime blood and how these ways of living contributed to the creation of an ecosomatic, earth democracy infused, land-based environmental education.

In the sections that follow, I dive deeper into the research outcomes and how this study answered each of the four research questions. Next, I revisit and re-write my positionality statement after having journeyed through the four research questions of this study to reflect on how this somatic journey has changed my sense of self in relationship with the collective of human and more-than-human relationships that make me. This chapter ends with a section on future directions, dreams and portals that this kind of research opens up.

Research Questions

Living Ways of Gut

The first research question pertained to what ways of living in relationship to my physical, emotional, and planetary life encompass my gut. This research showed that living relationships created my unique gut ecology, which is constantly emerging, unfolding and changing. They shed light on the primal choice of going forward or holding on which shaped all the physical, emotional, and planetary entanglements they were in. Gut's metabolic agencies included their simultaneous resistance and a permeability in ways of interacting with the world. The ways of living also embodied metabolic knowing of the gut which was communicated through the spectrum of diarrhoea to constipation, with harmony in the middle.

My gut was found to be a liminal portal that bordered the world and the body with an immense primality of an abundant, overflowing life force. The microbiome was an enchanted forest made of millions of gut microbes, an alive repository and archive of my gut's ancestors, ancestral soils, ancestral plant kin, food kin and herb elders. The entangled agencies of the microbial kin were also found to be quivering within the agency of the shit that the gut produced.

The ways of living also shed light on the gut's journey with grief through the life-changing reality of my father's illness and subsequent death. It showed how the gut digested, lived, metabolised this pain and grief, reflected in the synergy between metabolising food and emotions. These living ways of the gut also highlighted the reciprocal relationship between the health of the gut and my sense of wellbeing. Both affected each other and nourished each other through the connection between my emotional state and thickness of the gut wall.

The gut also showed us the throbbing and vibrant metabolic lives of ancestral gut lineages which have been sustained with the thaali of food with all the six tastes of ayurveda, in the six seasons of Vasant Ritu (spring), Grisham Ritu (summer), Varsha Ritu (Monsoon), , Sharad Ritu (Autumn), Hemant (Pre-winter), Shishir (Winter). The living ways of the gut dwelled and pulsated in circadian rhythms of these seasons, in non-linear, decolonial liberated time paradigms which honoured the ancestral guts in the ancestral bodies.

The gut's digestive life was found to be made of ayurvedic practices and rituals, paratha, dosa, idli, ragi mudda, daal (lentils), chawal (rice), ghee, roti, sabji (veggies), dahi, almonds, walnuts, ginger, buttermilk, jeera (cumin) powder, soonth (ginger powder), haldi (turmeric), kali mirchi (black

pepper), castor oil, and mustard oil. It was also found that my gut's living ways held promiscuity, desperation, vulnerability, hunger, desire and cravings for the ancestral gut seasons, food and time. For a way of eating assembled in the relationships of my mother, her hands, her love, my home, my community, my ancestral land and waters, my ancestral plant and animal kin.

The study shed light on how the gut throbbed in metabolic literacies of entanglement, unfolding, and participating in the larger planetary metabolism while also being implicated in harmful colonial, capitalist, violent ways of relating and being in this world through being a post-modern industrial gut digesting in a toxic environment. The metabolic potential, capabilities, sensibilities, imaginaries of the gut invited the readers to embrace, digest, breakdown, chew, surrender, and metabolise the toxicity of a world in capitalist ruins. Like the primal sphincteric choice of going forward or holding on, the metabolic era's sensibilities mutated this choice into "healing/going forward" which implied changing the ways of living and digesting; or "dying/holding on" to current harmful ways of living. The path of "going forward" called forth the vision for metabolic regeneration of a world which is somatic, relational, multispecies, entangled metabolism, with the gut's microbial kin as primary allies.

Living Ways of Breath

The second research question pertained to what ways of living in relationship to my physical, emotional, and planetary life encompassed my breath. This study revealed that breath's physical life encompassed physiological anatomy through the respiratory world of bronchioles, alveoli, and cilia. The discussion then explored a fuller expression of the inhalation, exhalations, pauses, flows through ancestral breath lineages of yoga. These discussions then proceeded into the nuances of breath's relationship with yogic breathing, cycles of yogic breath and pranayama. It was found that these lineages felt alignment with the Krishnamacharya Mandiram of Yoga where the strength of the movement in this yogic practice came from the breath's stability. Furthermore, it was also found that the breath communicated their wisdom and knowledge through shallow/deep breathing, shorter/longer inhales and constricted/expanded exhales. The fullest, most expansive expression of the breath's being was found in the yogic breathing cycle made of Bahya (exhalation), Bahya Kumbhakam (suspension of breath after exhale), Abhyantara (inhalation) and Antar Kumbhakam (retention of breath after an inhale). It was also found that the breath was an expression of prana (life force) and was shaped by the ebbs and flows of this force. The breath also shed light on agni (fire), diaphragm, agni kriya, Kapaalbhaati and brahmari pranayama as practices that connected to the prana more deeply.

Breath's emotional life was found to encompass the feelings of suffocation and anxiety. Within suffocation the breath reflected on the experiences of bronchitis. These emotional ways of living explored the sensations of sputtering, gasping wriggling, writhing, and wheezing brought forth by the bronchitis. They also reflected on the squirming, aching and struggling discomfort of smoking. These states were found to be the ways that the body and the breath were communicating layers of anxieties stored inside them. These ways of grappling for air and freedom were found to be entangled in hypervigilance, uncertainty, stress, sadness, grief, caregiving, fear, and burnout brought forth by the pandemic. There were impulses of uncontainability, incoherence, plurality and contradiction found in anxiety enmeshed in somatic sensations of prolonged breathlessness, hyperventilation, heart palpitations, tense muscles and tight hips. The breath then shed light on the somatic toolkit for new ways of breathing, healing, and navigating the outer and inner ecologies of life through pranayama, exhaling through the mouth in heightened states of panic, doing four count breathing (also called box breathing), chanting OM and humming while breathing.

The planetary life of the breath was found to be entangled in interspecies planetary breathing, marine mammal mentorship of weddel seals and ganges dolphins, breath's relationship with air and fire as well as the ways of an ecopolitical breathing which involved combat breathing and black feminist breathing. Breath reflected on inter-dependence, planetary life force and planetary breath where the "breathing scapes" unfolded over time, and lands, within trees, coral reefs, forests, marine animals, earth's breathing, ancestral breaths (past and future), soils and ecosystems. These breathing scapes brought forth the qualities of the breath as being promiscuous, permeable, uncontainable, unbound, and undefined. It was also found that marine mammals were guides, and mentors on ways of breathing in an increasingly un-breathable world. The breath shed light on the kinship they felt with the Baby Weddel seal's coughing and sputtering and how the seal reflected the graceful movement between the frozen world of breath's suffocation and the liquid world of abundant liberation. Similarly, the kinship with ganges river dolphins was found through lessons on echolocating heaviness, tightness, lightness, stiffness, pain and freedom in the body through the breath's inhalations and exhalations.

Further discussions on atmospheric entanglements revealed that geopolitical colonial realities carved an uneven-ness, inequality and injustice in breath's life where they experienced an unbreathability and unbecoming due to the air pollution in Delhi and Ahmedabad, entangled with the desperation to breathe freely. This was deepened through reflections on fire through the experience of the breath with wildfires on turtle island, with indigenous fire knowledge and full

moon fires at High Park, Tkaronto where the former signified harmful relationships with the land and brought forth anxiety and suffocation; and the latter signified right relationships with the land which in turn brought forth healing, and relief from the same anxiety and suffocation. Lastly, the planetary ways of breathing explored ecopolitical breath through Fanonian combat breathing, Gumbs's black feminist breathing and Gabrys's breathable worlds where the fight for breathing was found to be the fight for justice and these were simultaneously socio-political, ecological, epistemic, ontological fights involving a revolutionary mix of earthly entanglements, tensions, struggles and ways of living that heal the unbecoming of breath. It was also found that the breath held a pulsating force of agency, resistance, portal energies, potency, potentialities, and a decolonising liberating force of everyday life in these worlds of oppression and liberation. The enmeshments in the fights for breathing and liberations in my life as a brown queer woman were found to be further entangled with the struggles of the most suffocated women and queer folx in the world: black women, black queers, indigenous women, indigenous queers, dalit women and dalit queers, other brown women and brown queers.

Living Ways of Moontime Blood

The third research question asked what ways of living in relationship to my physical, emotional, and planetary life encompassed my moontime blood. This study revealed that menstrual blood's physical life encompassed ways of my bleeding life in the form of menstrual, follicular, ovulatory, and luteal phases. It was found that their bleeding life was a mesmerizing mix of Prerna's uterine lining, unfertilised egg, blood, oestrogen, and primal life force where for the last sixteen years of my menstrual life, they have flown 10,000 ml of this mix of sacred life medicine in seasons of roughly 26 to 35 days. The study also shed light on the limitation of western colonial science, through their experience of gynaecology as an insufficient paradigm of healing their phases, cycles and life energies. Through the research process, moontime blood revealed their entanglements of distress, pap smear, vagina, sonography and PCOD (polycystic ovarian disease). The reflection on physical life ended with a celebration of the blood's intuition and wisdom in resistance and rejection of colonial medicine's paradigm of hormonal medication.

According to this study, moontime blood's emotional life encompassed states of trauma, anger-grief, fear, cleansing and joy. These discussions shed light on the trauma of physical assault, violence and the ways that this experience caused physical, emotional, and mental pain. Blood also shared their anger and grief around cycles of unsafety, triggers, dysregulation, hypervigilance, and exhaustion wrapped in the loss of freedom, spontaneity, trust and body's biological sense of time.

The experiences of fear were enmeshed in unpredictability, uncertainty, chaos and suffering wrapped in constant state of unsafety inside and outside my body. This was found to be further entangled in the presence and absence of community care, PTSD (post-traumatic stress disorder) and inflammation. These discussions then shed light on the cleansing offered by the seven grandfather teachings of Respect, Bravery, Humility, Honesty, Love, Truth, and Wisdom where settler moontime blood lineages from India and Pakistan were found to be conversing with the land and ancestors of Turtle Island. These reflections swirled in the medicines of the bear bundle medicine wrapped in moon cycles, high park, Micicaquean creek and East Gwillimbury.

It was also found that the state of joy which moontime blood experienced was brought forth through curiosity, expansion, wonder, compassion, safety and abundance in my body anchored in joy of somatic practices of dancing, singing, cooking, being by the water, and journaling wrapped in rest and stillness. The Zumba classes were found to have led to sustained joy for the blood and my body, facilitating connection to the inner child.

Moontime blood's planetary life was found to have entanglements with moontime plant medicines, strawberry moontime temporalities, liquid lunar worlds, right (menstrual) relationships with the earth and the resonances I share with a planetary moontime cycle. It was found that moontime plant medicines were assembled in ancestral lineages holding the wisdom of papaya and pineapple, black raisins and saffron. They also touched upon the berry medicine from Turtle Island. Strawberry moontime temporalities were found to be entangled with the somatic, sensory, oozing, dripping and flowing promiscuity of the blood where they held un-containability, unbounded-ness, non-linearity, cyclicity, seasonality and a decolonising force that resisted the colonial linearity of time. The berry medicine was found to be entangled with menstrual cycles, phases, transitions, grandmothers, temporality, life, community and care.

Ways of living of the blood also shed light on resonances that the blood shared with the flows of water and grandmother moon where water was understood as mother earth's blood and an extension of menstrual blood. These discussions also touched upon maternal menstrual lineages and the waters of feminine ancestries of wombs. It was found that PCOD (Polycystic ovarian disease) reflected menstrual somatic reflection of the planet's disharmony within my body. This discussion showed that the healing of the flows of the blood was intertwined with the health of the planetary menstrual waterways. It was also found that my settler-moontime-blood's experience of the waterways in Turtle Island was entangled with the medicine of the waterways of menstrual

ancestral lineages spanning the rivers of Narmada, Sabarmati, Yamuna, Ganga, Kaveri, the Arabian sea, Indian ocean, and Bay of Bengal in India. The blood also discussed expanding cycles of enmeshment, irreconcilable tensions with regard to colonial harm, responsibilities to be in right menstrual relationships, moon time teachings of offering menstrual blood to mother earth entangled in lunar cycle, menstrual cycle, earth, waters of the earth, women's womb, and the larger community that women are part of. These reflections concluded with a conceptual visualisation of planetary moontime holding the synchronicity between the seasons of the blood (physical and emotional) and seasons of the earth (planetary).

Ecosomatic, Earth Democracy Infused, Land-Based Environmental Education

The fourth and the last research question pertained to how the explorations with the body added to an ecosomatic, earth democracy infused, land-based environmental education. This ecosomatic research engaged in a pedagogical exploration which revealed the ways of making home of the body and planet through healing, sensing, feeling, dreaming, digesting, breathing, and bleeding new somatic, emotional, and planetary worlds. This study added to the scholarship of ecosomatics by subverting the “double pitfall of ecosomatics” revolving around the colonial-essentialist discourses of “somatics” and “ecology”.

The study subverted the historically colonial discourse on somatics by revealing the metabolic, breathing and bleeding agencies of a brown queer woman's body with ancestries from India and Pakistan, currently residing as a settler on Turtle Island. It honoured and celebrated the sensorial and corporeal life of the researcher's marginalised body through her gut, breath, and menstrual blood. Through this, the study created a crack and fissure in the homogenous, occidental, white-bodied discourse on somatics and offered openings to other kinds of bodies, other parts, and processes of the bodies of different ethnicities, genders, sexualities and (dis)abilities to envision, deepen, explore, heal, breathe, digest, and bleed their different ways of being in this world, with their bodies and this planet.

This study also showed the resistance and a permeability of the body's ways of engaging with the world which added to the scholarship on ecosomatics because it honoured a body which dwelled in desperation, entanglements, vulnerability, hunger, desires, relationships, aches, cravings, weaknesses, imperfections, desperations, promiscuous unbounded-ness, and decolonising liberating forces. These somatic ways of living added to the field of ecosomatics by honouring the wholeness and fullness of the experience of a throbbing primal body, vibrating with life force, on

this living earth, rather than engulfing the experiences of all bodies into a singular obsession to be perfect, to be fit, to be strong, or to be fixed.

It also shed light on the different unique somatic ways that a body communicates: diarrhoea, constipation; constricted/shorter/shallow/expansive/longer/deeper inhalations and exhalations; (ir)regular moontime blood flows. All these ways of communications reiterated the the metabolic, breathing and bleeding agencies that reside in the body, with their wisdom, knowing, sensing, intuition, prophecies, portals, and dreams, in complete defiance of the colonial notions of a body as an atomised, individual object to be fixed.

The study also revealed the various somatic practices and rituals that facilitated connections for the researcher with her ancestral gut, breath and moontime blood lineages. My maternal and paternal somatic lineages, my home, my community, my ancestral land and waters, my ancestral plant and animal kin were all revealed in the study as relational entanglements that were as much a part of this body as oxygen and water. The work with all these ancestral somatic lineages highlighted the entanglements and relationships that shaped and made the somatic ways of the body possible in the first place. Furthermore, ways of eating, breathing and bleeding were revealed to be in swirling, life affirming relationships with Ayurveda, Indian thaali, Yoga, Prana (life force), Krishnamacharya Mandiram of Yoga, Yogic ways of breathing, Grandmother Moon and Moontime Teachings. The somatic practices of Ayurveda and Yoga from India and Moontime Teachings from Turtle Island, relocated somatics in Indigenous ways of being, knowing and relating rather than the mainstream western somatic discourse that often focussed on white western modalities which appropriated various aspects of Indigenous knowledge. This relocation in the study also significantly extended and opened up the ecosomatic scholarship.

This research also extended ecosomatics by defying the colonial ecosomatic time paradigms. It revealed that the ways of being, knowing and relating of the gut, breath and blood dwelled and pulsated in circadian rhythms of seasons, in non-linear, decolonial liberated time paradigms honouring the ancestral somatic lineages of my body. The research shed light on the various sensory, oozing, dripping, flowing and promiscuous entanglements of the somatic body that held an un-containibility, unbounded-ness, non-linearity, cyclicity, seasonality and a decolonising force which resisted the colonial linearity of time.

Furthermore, the research added to ecosomatics by not only honouring the wholeness of a physical body but also celebrating the richness of a body that dwells in feelings and has her own distinct emotional life. Approaching the emotional scape of the somatic body with reverence, curiosity and respect expanded the ways that ecosomatics works with solely the physical capacities of bodies without diving deeper into their emotional world which, as revealed by the study, shaped the physical capacities of a body in more ways than one. The research revealed that body-work involved emotion-work with the gut, breath and blood which held grief, suffocation, anxiety, trauma, anger, fear, and joy. The sputtering, aching, wriggling, struggling, relieving, gasping, empowering, liberating, softening, and cathartic energies that these emotional states invoked revealed an uncontainability and plurality in the emotional life of the somatic body, which resisted the homogenizing narratives of ecosomatics. Furthermore, the study showed that ways of connecting and listening to the gut's, breath's and moontime blood's emotional experience of the world involved cultivating curiosity, reverence, wonder, compassion, safety and abundance for the body anchored in the somatic practices of cooking with ayurveda (gut), moving with yoga (breath), dancing with zumba and being by the water (moontime blood). The study shed light on how all of these together participated in the creation of somatic toolkit for new ways of digesting, breathing, bleeding, healing, and navigating the outer and inner ecologies of one's life, in constant relationship with the world and the planet.

This study also extended the scholarship on ecosomatics by subverting its colonial notions of "ecology" and "environment" by drawing on energies from land-based education and earth democracy. The research called in questions, tensions, complexity, non-linearity, and messiness into notions of environment through bringing "land", "colonisation", "justice" and "democracy" into the discussions on the somatic body in relationship with the planet.

Land-based education brought in the openings and questions for this somatic body-work as a non-indigenous, settler person of colour. It did so by calling forth experiences of the post-modern gut chewing, digesting, and unfolding in capitalist ruins, throbbing in metabolic literacies with the planet, while being implicated in harmful colonial, capitalist, violent ways of digesting and excreting. The study also dived into the atmospheric entanglements, geopolitical colonial realities, unbreathability and unbecoming of breath, the struggle to breathe freely intertwined in the struggle for freedom and liberation, harmful relationships with the land contained in the wildfires on turtle island, right relationships held in indigenous fire knowledge and full moon fires at High Park (Tkaronto) as well as ecopolitical breathing to create just and breathable worlds. The study revealed

the various ways that the work with the body in relationship to the land, is unbound, unresolved, and unsettling. The study revealed the complexities of being a settler-body, bleeding settler-moon-time-blood, involved in expanding cycles of irreconcilable tensions regarding colonial harm, holding responsibilities to be in right menstrual relationships with the land and the planetary menstrual waterways.

Through these discussions, the study shed light on the socio-political, ecological, epistemic, ontological fight for justice enmeshed in the somatic body, pulsating in the revolutionary mix of earthly entanglements, tensions, struggles, agency, resistance, portal energies, decolonising liberating force and immense potentialities. It is through these reflections that the study sat with the questions on what it meant to live on lands that were and continue to be colonised lands, stolen from indigenous people, what it meant to do somatic work, on this colonised land, in this time, in this place, which was and continues to be native land, how to create relationships with the land from a place of reverence and respect for indigenous keepers of this land, how to interrupt the harm that settler colonial knowledge has caused. With this, the research opened and expanded ecosomatics to questions of digesting, breathing, bleeding, and resisting the oppressive colonial structures that harm “ecology” and “environment”, all over the world.

The study revealed reflections on staying present with these tensions and complexities without escaping settler guilt and responsibility. It is important to note that the emotional and physical capacities of the somatic body allowed the creation of a somatic settler-body that was able to sit with these emotions. Through this, the study shed light on the importance of somatic capacity building for decolonial environmental education work which expands the possibilities of creating right relationships with the indigenous land and people, as settlers. This research showed one of the many ways of holding oneself accountable, in environmental education, to oppressive structures that shape ecology and environment: becoming aware of the many ways that one’s ancestral lineages converse with the lineages of the land that one is on. In this study, this was highlighted through the somatic life of my brown woman settler body, having ancestral lineages from the colonised lands of India and Pakistan, conversing with the ancestral lineages and lands of Turtle Island. This is how the study revealed making meaning of my physical, emotional, and planetary life while learning respectful ways of being in this body, on this land.

This study further deepened ecosomatics by bringing in energies from earth democracy to connect with big picture perspectives on the planet as a whole and experiences of earth as one family. And

within earth democracy scholarship, the study filled the gap by adding the diversity of living somatic bodies into the discourse of earth democracy on the various diversities embodied in earth democracy around food, water, soil, seed, and knowledge. The study deepened the paradigm of the earth democracy, of making home of the planet through an earth family and a living democracy, to making home of the body as well, to participate in this living earth democracy in a fuller, richer, more complex and diverse ways.

The study invited in questions and complexities of earth democracy and applied it to bodies. This called forth questions of what kind of earth democracy is created when the body in relationship with the earth is honoured, what kind of democracies are birthed when one honours the democracy of the somatic body, what kind of diversity is dreamed into a liberated earth family where diversity of bodies is as important as diversity of the mind.

The study sat with and responded to the questions offered by earth democracy by calling forth reflections on planetary digestion, the visions for metabolic regeneration of a world which is somatic, relational, multispecies, entangled metabolism, with the gut's microbial kin as primary allies. It also called in reflections on a planetary breathing, marine mammal mentorship of weddel seals and ganges dolphins, breath's relationship with air and fire, breathing scapes unfolding over time, and lands, within trees, coral reefs, forests, marine animals, earth's breathing, ancestral breaths (past and future), soils and ecosystems. The research also called forth the entanglements of lunar cycles, menstrual cycles, earth's seasons, earth's waterways with conceptual visualisations of planetary moontime holding the synchronicity between the seasons of the blood (physical and emotional) and seasons of the earth (planetary). Through these conversations, the study highlighted how the planetary life of the gut, breath and blood made and shaped the somatic body of the researcher. By discussing the above mentioned planetary entanglements in the context of the specific somatic life of my body, this study expanded earth democracy work into opening itself to the pluralities and diversities of sensing, feeling, living, relating, knowing and being with bodies, and their different processes, made possible by a multitude of planetary entanglements.

Therefore, by extending and filling the above-mentioned gaps of somatics and ecology in ecosomatics through the scholarship on land-based education and earth democracy, through the above discussions, this study opened up a differently textured ecosomatics which subverted the colonialist-essentialist constructions of bodies and nature by rooting into in an ethics of entangled, corporeal, and somatic relationality.

Revisiting Positionality

After the journey this researcher took, through the four research questions, this section holds a revisited and re-written, somatically textured, and entangled positionality statement to tangibly see the journey that this research provided through an expansion of the awareness of the web of relationships that shaped my body.

I am a digesting, breathing, bleeding, somatic, sensory, corporeal, feeling and relational being who is also able-bodied, bisexual, cis-gendered, and a woman of colour. I am a first-generation South Asian immigrant with ancestral gut, breath and blood lineages from India and Pakistan. I metabolise, inhale, exhale and menstrually bleed as a daughter, a sister, a cousin, a niece, an aunt, a writer, a facilitator, a cook, a plant-mom, a dancer, and a yoga practitioner. My class and caste privileges are layered in an urban middle class Indian family from Vaishnav and Kshatriya caste.

I am shaped by the human and the more-than-human collective of my ancestors (dead and alive), the land, the mountains, the rivers, the trees, the birds, the herbs, and the cats that have been present in different stages of my life. I honour the throbbing pulsating force of agency, resistance, portal energies, potentialities, and the decolonising liberating force of everyday life held within my somatic body shaped by living relationships with this collective.

I took my first breath and digested my first meal in Ahmedabad, Gujarat in India. I have experienced my very first cycle of menstruation on this land. I have inhaled and exhaled for most of my life on this land. I have a younger brother who currently lives in Munster, Germany. I can speak Hindi and English while understanding Gujarati and a little bit of Punjabi. As a child of a working mother and father, my brother and I spent a lot of my time in Ahmedabad with Nana-Nani (maternal grandparents) and Mama-Mami (maternal uncle and aunt). Their love and care have shaped me in ways words won't let me fully articulate. Similarly, my chachu-chachi (paternal aunt and uncle) and cousin from Delhi have showered me with love and support that has shaped me in numerous tangible and intangible ways. These human ancestral lineages are entangled with the more-than-human ancestral lineages of the throbbing, flowing, vibrating microbial kin that reside in my gut. These kin have carved my gut's metabolic cycle which has in turn been shaped by the soil, food, water and air that has entered the gut in a moment of time, space and energy. This has in turn been shaped by the land I have been on, the relationships I have engaged in, and my emotional landscapes of grief within this somatic body.

Being born and brought up in Ahmedabad, it is impossible to not feel the pull of the Sabarmati river, known famously for the ashram that Gandhi built right on the riverbanks. It originates in the expansive Aravalli Mountain range in Rajasthan, which I have visited often as a child, and flows westwards towards the Arabian Sea through Gujarat. This river has held a very special place in my heart, mind, and body. I have spent hours listening and talking to this river. She is also the river that carries the ashes of my dead father. My paternal ancestral lineages will forever be enmeshed with the waterways of this being, reminding me of the flowing, gushing, coursing and rippling ways of my father's life and death. Another more-than-human being intertwined with my father is the Amaltas tree (*Cassia fistula*) that grew in our garden in Ahmedabad. This being brought me much joy and many lessons over decades of my life. She was my father's favourite tree. She also died when my father died. They were connected in their life forces. I will never forget how her bright yellow flowers and fruits filled the streets leading to our house.

I also honour the waterways of Ganga and the presence I shared listening and talking with her. Ganga is entangled with my marine mammal kin, of Weddel Seals and Ganges River Dolphins who have shaped the ways I breathe through heaviness, tightness, lightness, stiffness, pain and freedom in my body wrapped in the lands of Rishikesh and the water of the river Ganga. All of these beings have significantly unfolded with my inhalations and exhalations and helped me breathe my way to freedom (from suffocation). Another special more-than-human being that has shaped me in ways I don't think I have truly fathomed yet is the Narmada River. Narmada, in Hindu mythology, is considered even holier than Ganga because it is said that while one must take a dip in Ganga to be purified of one's sins, when it comes to Narmada, one is purified of one's sins by just looking at it.

Home is also enmeshed in the ways of being of a very special Neem tree (*Azadirachta Indica*) that I have grown up with since 2006. She was right outside my bedroom's window. I would wake up to the sound of birds that she held on her branches and fall asleep to the rustling of her leaves in the night breeze. I also honour Shamsheer here, one of the many outdoor cats that graced our house often, right before I left India (to transition to turtle island) and has taught me multiple lessons on how to hold and respect boundaries.

All of these relationships are further entangled with my planetary plant kin that have nourished my ways of digesting, breathing and bleeding: papaya, pineapple, black raisins, saffron, almonds, walnuts, ginger, turmeric, mustard, sesame, rice, wheat and millets.

My maternal ancestry is entangled with the lands of Jhajhar, Haryana in India as well as Lyallpur and Rampur in Pakistan wrapped in languages of Gujarati, Punjabi, Hindi, and English. My mother lives in Ahmedabad, India and is a librarian at Physical Research Librarian. My Nana (maternal grandfather) saw death and violence first hand, in the tumultuous and traumatic journey from Pakistan to India. He was very young when his family was forced to leave everything they cared for- their home and their home-land. The stories of that time that he used to share with us still give us the chills. My Nani (maternal grandmother) was younger when she moved with her family and experienced a relatively safer journey to the refugee camps in Old Delhi. Her family was rehabilitated from the camps to housing for refugees in Kalkaji, a neighbourhood that still exists in Delhi and has evolved with layers of refugee histories and time. The trauma of the partition continues in the blood of this ancestry, in invisible and visible ways.

These maternal lineages are entangled in the pulsation of the ayurvedic ancestral gut lineages of my plant kin, food kin grown in the cyclical, seasonal paradigm of six seasons in India and six tastes of the Indian thaali assembled in the hands, love, care, and nourishment of my mother. My gut's, breath's and moontime blood's first relationship with the world unfolded in the swirling waters of my mother's womb. My gut's throbbing and alive microbiome forest, my breath's inhalations, and exhalations as well as my ways of bleeding are all somatic descendants of these lineages. These maternal somatic lineages are further engulfed in the larger metabolic process that is the earth, as well as planetary breaths and menstrual waterways. The earth's planetary gut, breath and menstrual waterways contain these lineages, contains me, nourishes me, surpasses me, outlives me, in multiple cycles of entanglement.

I am also shaped by the oozing, flowing, dripping life forces of sixteen years of menstrual bleeding, maternal uterine lineages, unfertilised eggs, primal life force and layers of endometrium lining. The collective entanglements of trauma, irregular menstrual flows, hormonal imbalance, violence, lack of safety, states of trauma, anger-grief, fear, cleansing, joy, PTSD (post-traumatic stress disorder) and inflammation make and unmake me the ways of bleeding in this somatic body. These ways are further enmeshed in the earth's seasons of winter, spring, summer and autumn. I am an extension of the earth-body's flows, and they are an extension of me.

My paternal lineages are entangled in the lands, guts, breaths and blood and waterways of Chittoor in Andhra Pradesh, India. My father's childhood unfolded with multiple lunar cycles in the lands of Bengaluru in Karnataka, India. My father's parents came from Chittoor in Andhra Pradesh,

India and had three children: My father, Chachu (elder brother), and Attha (younger sister). This side of my family speaks Telugu, Kannada, Hindi, English, and a little Tamil. My Dadi (paternal grandmother), who has passed onto the next realm, came from ancestors at Mulbagal, near Punnur in Andhra Pradesh, India. They were farmers who grew tomatoes, mangoes, and tamarind. She lived on that farm and that land (before she got married), metabolised realities, breathed and moonlight bled on that land. She was nourished by that land and beings, both human and more-than-human.

My Tatha (paternal grandfather), who has also passed onto the next realm, came from a family of orange traders and was known as “Kittalkayi” (traders of orange) from Chittoor, Telangana. His grandparents relocated to Bengaluru, Karnataka in the hopes of a better life as rice traders, in a place called “Akkipet” (“Akki” means rice and “pet” means place). Tatha was an economist, his father was a Carnatic Singer and cousins were zamindars (landholders) in the sugarcane belt. Zamindari (landholding) system existed in India since the time of the Mughal rule and evolved into a more brutal violent form when the Britishers colonised the country. Thus, this side of my ancestry is implicated in the violence of British rule in India. My ways of digesting, breathing, and bleeding descend from here as well. They are complex in their entanglements with both the worlds of oppressed and oppressors, unfolding with the colonisation of India and Partition of India and Pakistan, in the generation of my grandparents.

My father’s ways of living became entangled with the lands and waterways of Ahmedabad, Gujarat when he moved there for his first job at British Library as a library assistant. That’s where he met my mother who was also a library assistant back then. That’s where they fell in love. My ancestries’ ways of loving, living, being and caring are invisibly and visibly entangled in British libraries, reminders of India’s colonisation, for the generation of my parents.

These same geopolitical colonial realities of India, continue into my generation, to shape my ways of breathing, including shortness of breath, wheezing and a desperation to breathe freely due to the atmospheric entanglements of cities in Global South becoming the manufacturing-dumping ground for Global North. These ways of breathing are also shaped by the collective of (open, permeable, and porous) millions of alveoli and rhythmic pulsations of cilia inside my somatic body. This collective is further entangled in the pauses, depth, flows of my breath engulfed within ancestral inhalations and exhalations of yoga, shaped by the ebbs, and flows of prana (life force) as well as the emotional landscape of suffocation, bronchitis and anxiety wrapped in sensory

experiences of hyperventilation, heart palpitations, tense muscles, tight hips and hypervigilance. My maternal and paternal breath lineages, past and future are also enmeshed within the expansion, abundance, lightness, state of balance, freedom, liberation, and prana (life force) experienced within inhalations and exhalations. These wide breathing scapes unfold over time, emotions, bodies, across lands, within trees, coral reefs, forests, marine animals, earth's breathing, ancestral breaths (past and future), soils and ecosystems. The rhythm of my inhalations and exhalations are intertwined with the pulsation of planetary inhalations and exhalations.

These are the layers of complex histories I carry with me and inside me, in my body, my gut, my breath and my menstrual blood. I sense, feel and experience all my relations: my brother, mother, father, nana, nani, tatha, dadi, mama, mami, chachu, chachi, cousin and all the generations of the ancestors that came before them and will come after them, after us. I am sitting with all the beings on the land, under the land and above the land – in Chittoor, in Rampur, in Lailpur, in Ahmedabad, in Bengaluru, in Kalkaji. The whole of this collective has made my life possible. I honour this collective here.

It is these ancestries, these lands and waters that converse with the ancestries, lands, and waters of Turtle Island. These are the human and more-than-human relationalities that I bring to this land, as a settler. I am a settler-body, digesting, breathing, and bleeding on native land, where my gut, breath and moontime blood ancestral lineages are in conversation with the somatic ancestries and lineages of turtle island.

This land is the land of the Wendat, Anishinaabe, Mississaugas of the Credit, and the Haudenosaunee. This is their land. This is where they walked, ate, sang, dreamt, breathed, held ceremonies and grew their plant medicines. I honour that the human and more-than-human lineages on this land are guided by the wisdom of the dish with one spoon two-row wampum covenant signed between the Haudenosaunee and Anishinaabe nations. One of the many translations for the Kanien'kehakeh place name for Toronto is T'karonto which means the place "where the trees stand in the water" (T'aiiako'n Historical Preservation Society, 2011).

Relationships with the waterways of Turtle Island, especially, Niigani-Gichigami, (colonially named Lake Ontario), over the past 26 lunar cycles, have carved the ways of my flowing, oozing, and dripping of my menstrual blood. My settler-moontime-blood's experience of these waterways are entangled with the medicine of the waterways that my menstrual ancestral lineages have

experienced in the rivers of Narmada, Sabarmati, Yamuna, Ganga, Kaveri, the Arabian sea, Indian ocean and Bay of Bengal in India. My menstrual flowing life has also been shaped by balance and cleansing offered by the 440 Parkside collective who shaped me, took care of me and offered me the medicine of community. I honour the Ojibwe grandfather teachings, bear bundle medicine from the Three Fires Midewiwin Lodge enmeshed in full moons at High Park and Micicaquean creek (colonially named Holland river) in Tkaronto without whom my moontime relationships would not be the same.

Being in a diasporic body, on a diasporic planet is being like a seed. It is being in the state of promiscuous possibilities, being a seed, unfolding and growing with soil, lands, waters and ancestors of Ahmedabad, Chittoor, Rampur, Tkaronto, Lailpur, Delhi, Rishikesh, Dehradun, Bengaluru and Kalkaji. This is the vibrant multitude of living relationships that make my somatic living possible. I brought this multitude to the explorations of this research.

Future Directions, Dreams and Portals

Based on these conclusions, the future directions of this research can be exploring other bodily processes and/or parts that other practitioners feel connected to. This study is limited by its focus on the gut, breath, and blood. Other body parts/processes, their physical sensations, their emotional lives, and their planetary entanglements are rich with possibilities for further research. This research can also open portals into other kinds of relationships that the body holds with the world, including spiritual relationships, which this study doesn't touch upon. By focussing on the three types of relationships of physical, emotional, and planetary, this study is limited by the entanglements of these three kinds. There can be other ritualistic, spiritual lives of bodies that can be dreamed through the ecosomatic process of this research.

Furthermore, this research is shaped as much by what it includes as by what it leaves out. One of the biggest aspects of my somatic life that I have left out and wasn't prepared to work with yet was body shame. Fat shaming, body shaming and body dysmorphia are some of the areas, among many others, that this ecosomatic work can invite healing in. As a somatic bodyworker I still have healing to do, regarding this aspect of my somatic life. And maybe this is one of the many future portals for this research.

Future research could also dream more queer focussed ecosomatic work, where notions of woman and feminine are subverted to hold further entanglements in the lives of the body. Connected to

this, future research and dreaming can also open other earth democratic worlds where ecosomatic lives of bodies of different abilities, sexualities, genders, and ethnicities are explored. The limitation of this study is that it is specific to the somatic life of an able-bodied, queer, Indian woman's somatic life. Future work is invited into envisioning and deepening the work on somatic bodies exploring other pluralities and diversities.

Future portals are also invited into this work with different lands, different ancestries, and other indigenous ways of knowing connected to those lands and ancestries. The limitation of this study is that it explores three indigenous ways of knowing (yoga, ayurveda and moontime teachings), with the limited experience of the researcher and her body's relationships with these ways of knowing. Future research can explore many other indigenous ways of knowing and being with the body. Another connected future direction can be exploring deeper ways of relating to the body within these three ways of knowing. These knowledge systems are vast, layered, and extensive. Everyone's relationship with these ways of knowing will bring forth different aspects of these knowledge systems. All these ways of dreaming and creation are invited through the future research portals.

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