Cultivating Reciprocity

By Sheyda Rashidi

Cultivating Reciprocity

By **Sheyda Rashidi**

BComD, Art University of Tehran, 2019

Supervisor: Laura Kozak

A CRITICAL AND PROCESS DOCUMENTATION THESIS PAPER
SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIRE-
MENTS FOR THE DEGREE OF MASTER OF DESIGN

EMILY CARR UNIVERSITY OF ART + DESIGN

2023

EMILY CARR
UNIVERSITY
OF ART+ DESIGN

Acknowlededgements

To all members of The Roots Union garden,

Who made this project possible by participation, were open and warm, and welcomed a reciprocal mindset.

To Mom,

Who taught me reciprocity.

To Laura,

Who supported me throughout a challenging time in my life, and empowered me to grow both as a designer and a person.

To Craig,

Who I could count on for honest feedback.

To Louise,

Whose wisdom and kindness made a lasting impression on me.

To Zach,

Who pushed me beyond my limiting mindsets.

And To Ammirreza,

Who challenges me with love.

Index

Abstract

Cultivating Reciprocity explores the possibility of applying mutualistic interactions, like those prevalent in natural systems (e.g. clownfish and anemones), to social systems. It is a proposal in response to the individualistic and competitive mindsets that prioritize individual gain over collective well-being. This thesis proposes a two-faceted framework to design for reciprocal interactions in service design and social innovation projects. The reflective and holistic dimensions of this framework seek to enable interconnected relationships among humans and more-than-humans at three scales: Individual, Community, and Social Systems. The work has been conducted through number of collaborative projects with the Roots Union Community Garden and the Circular Food Innovation Lab as well as auto-ethnographic reflection. Cultivating Reciprocity proposes an approach for designing reciprocal interactions to prioritize collective interests and establish win-win scenarios within systemic design projects.

Towards Mutualism

During the climate crisis era of the 21st century, collaboration is crucial for human survival. However, many indigenous and cultural theorists point to deep-rooted limiting mindsets, such as scarcity thinking, as a barrier to collaboration (Kimmerer, 2013 & Brown, 2017). Scarcity encourages individualistic and competitive behavioral patterns (Brown, 2017), creating rips and gaps in socioeconomic systems and making them fragile and less resilient, while putting extreme stresses on environmental systems (Korten, 2022) (Fig.1). These systems are more vulnerable to emerging threats due to our preoccupation with short-term thinking and competition instead of investing in collaboration (Korten, 2022). My research studies the conditions for reciprocal and collaborative interactions to occur, and experiments with design-led methods to intervene at three scales – individual, community and systemic levels – to promote collaborative interactions.

Robin Wall Kimmerer describes the scarcity mindset as an attribute of modern capitalism and competitive markets, in which scarcity is not tied to limited natural resources and material wealth; rather, it is the result of how wealth and resources are exchanged and circulated. The market artificially creates this mindset by blocking the flow between the consumer and the source (Kimmerer, 2013). Scarcity is linked to hoarding, fear, and prioritizing the self over the collective good (Brown, 2017). Scarcity justifies individualistic behavior, prioritizes the self over the collective, and creates unnecessary competition (Fig. 2-4).

Moreover, the introduction of cartesian dualism by Rene Descartes (mind/body, society/nature, individual/collective) described a paradigm shift that eventually exacerbated individualistic behaviors. It became the fundamental philosophy in the West, driving modernization. By the end of the 20th century, it had influenced many worldviews and cultures (Escobar, 2018). This "Othering" mindset (Fig. 5) (Alvardo et al., 2021, p.3, par. 5) or "binary thinking" separates us from one another (Escobar, 2018, p.20). It enforces the human superiority belief, which justifies capitalizing on natural resources and endangering many living beings (Moore, 2015). Pretending we can live separately and take without giving back has
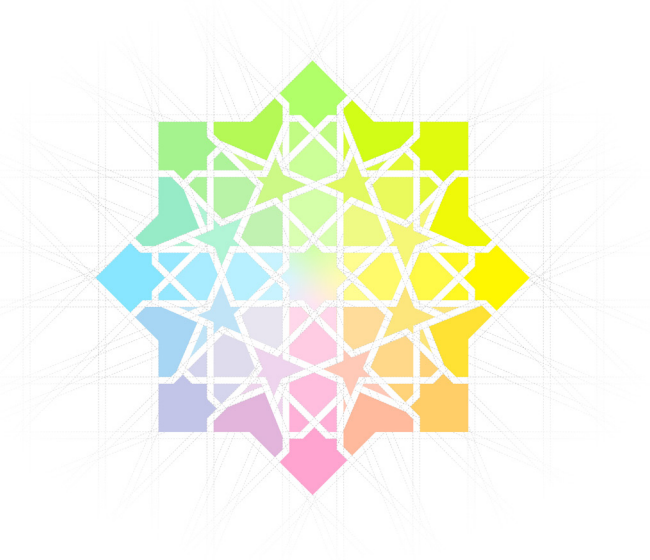

Figure 1.   In this document, I illustrate systems through Shamse, an Islamic concentric pattern representing Suffi's belief, "Unity of Being" (Shad Ghazvini & Edraki, 2020). This figure represents a healthy system without any gaps and rips.

created cracks and gaps in the interconnected web of life, threatening the survival of many species. By embracing our diversity and interconnectedness, we can decentralize power and resources. So, if some pieces fail to perform, the system will not break down entirely.

We are all interconnected, and our cosmos operates as systems, within systems, within systems (fig.6) (Meadows, 2009). Yet, we often act as individual nodes that do not always consider our entanglement and the well-being of other living entities. Therefore, becoming more mindful of our interconnectedness can help us foster collaboration and change individualistic behavioral patterns and cultivate abundance.
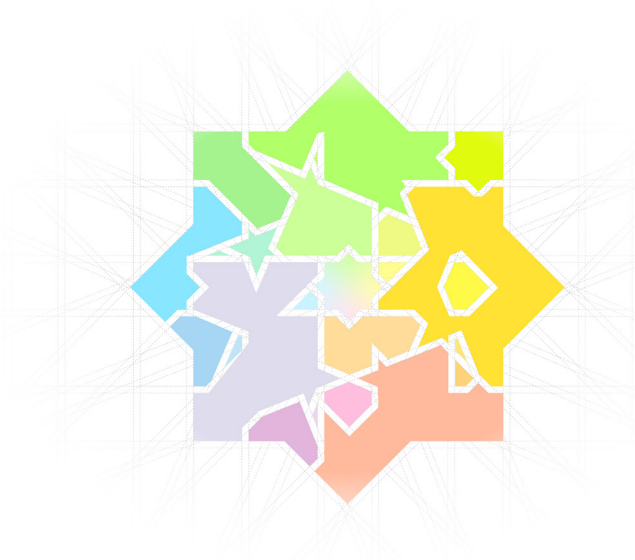

Figure 2.   Individualism and the scarcity mindset urge us to hoard, expand beyond our borders, and invade others' boundaries. It also correlates with power and resource centralization. Instead of embracing multitude and diversity, we merge and unify different pieces of a whole and remove the nuances.
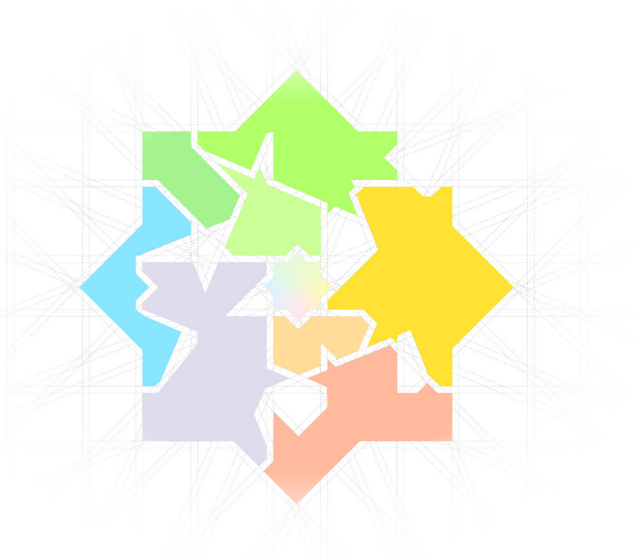
Figure 3.   In capitalistic socio-economic systems, power is not distributed evenly among different pieces of a whole. Instead of collaboration, there is an unnecessary competition of hoarding and accumulation. Under such pressure, individuals with less power can easily break, or the powerful pieces can absorb them. This will create gaps in our systems and make them fragile.
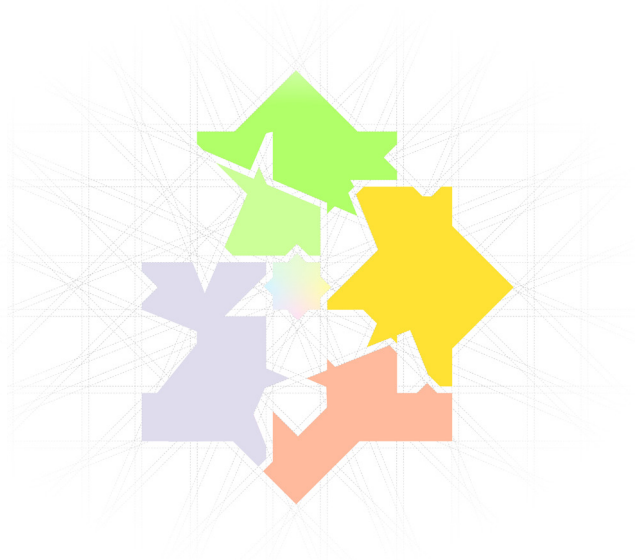
Figure 4.   Centralized power and resources would entail system failure; if one of these pieces fails, the entire system will fail (Manzini, 2013). This will eventually make the whole system weaker and more prone to breakdown in the face of emerging threats.

Conversely Kimmerer believes that an abundance mentality, grounded in regeneration, can disrupt this competitive economy (2013). When you do not experience fear of scarcity or fear of missing out, you can begin to trust others, which is critical for collaboration. Therefore, in order to facilitate collaboration among citizens, communities, or even countries, I believe we need to cultivate and amplify an abundance worldview, through a shift from competition to collaboration and from self-interest to collective well-being.

In nature, mutualism is the most prevalent type of relationship, characterizing roughly 95% interactions of the biomass (Jeremijenko, 2017). It is one of the contributing factors to such intricate interconnectedness in nature and nature's ability to regenerate and renew itself (Christian, 2001). These interdependencies make ecological systems more resilient (Nagaishi & Takemoto, 2018).

This project proposes using mutualism as a starting point for prototyping transition patterns that could help us become more resilient to current and emerging environmental and societal crises. It suggests paying more attention to our entanglements, to the interconnectedness of living beings, and cultivating reciprocity in our actions as counter frames dualistic and scarcity mentalities. It suggests a framework enabling designers to create win-win collaborations in place of unnecessary competition, thus, becoming more resilient to environmental and social crises (Fig.6).

"In a world of scarcity, interconnection and mutual aid become critical for survival."
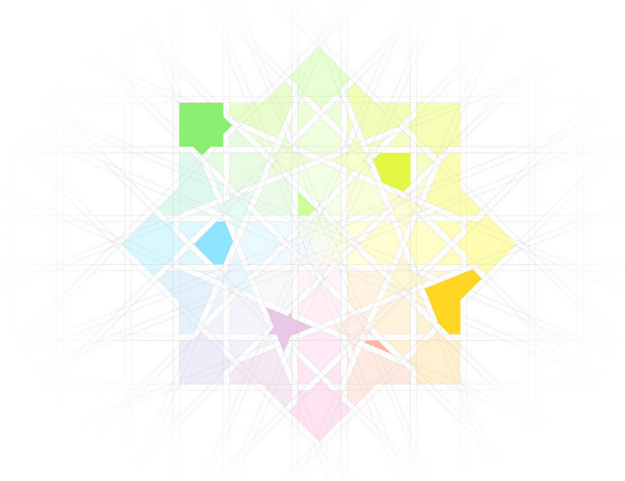
–Kimmerer

Figure 5.   We tend to preoccupy ourselves with our differences, and we feel a sense of belonging to those who look similar to us, hold similar values or reinforce our belief systems. However, if we look closer, we can see that we all belong to the same system regardless of race or species. We are all different pieces of the same whole. It is our mutual interest that the system functions better.

Figure 6.   Acknowledging our interconnectedness and cultivating reciprocity can strengthen our systems. By remaining diverse and interconnected, we can decentralize power and resources. So, if some pieces fail to perform, the system will not break down entirely. Considering our well-being intertwined with others' well-being leads to uplifting the underprivileged or struggling pieces and the system becomes more resilient overall.
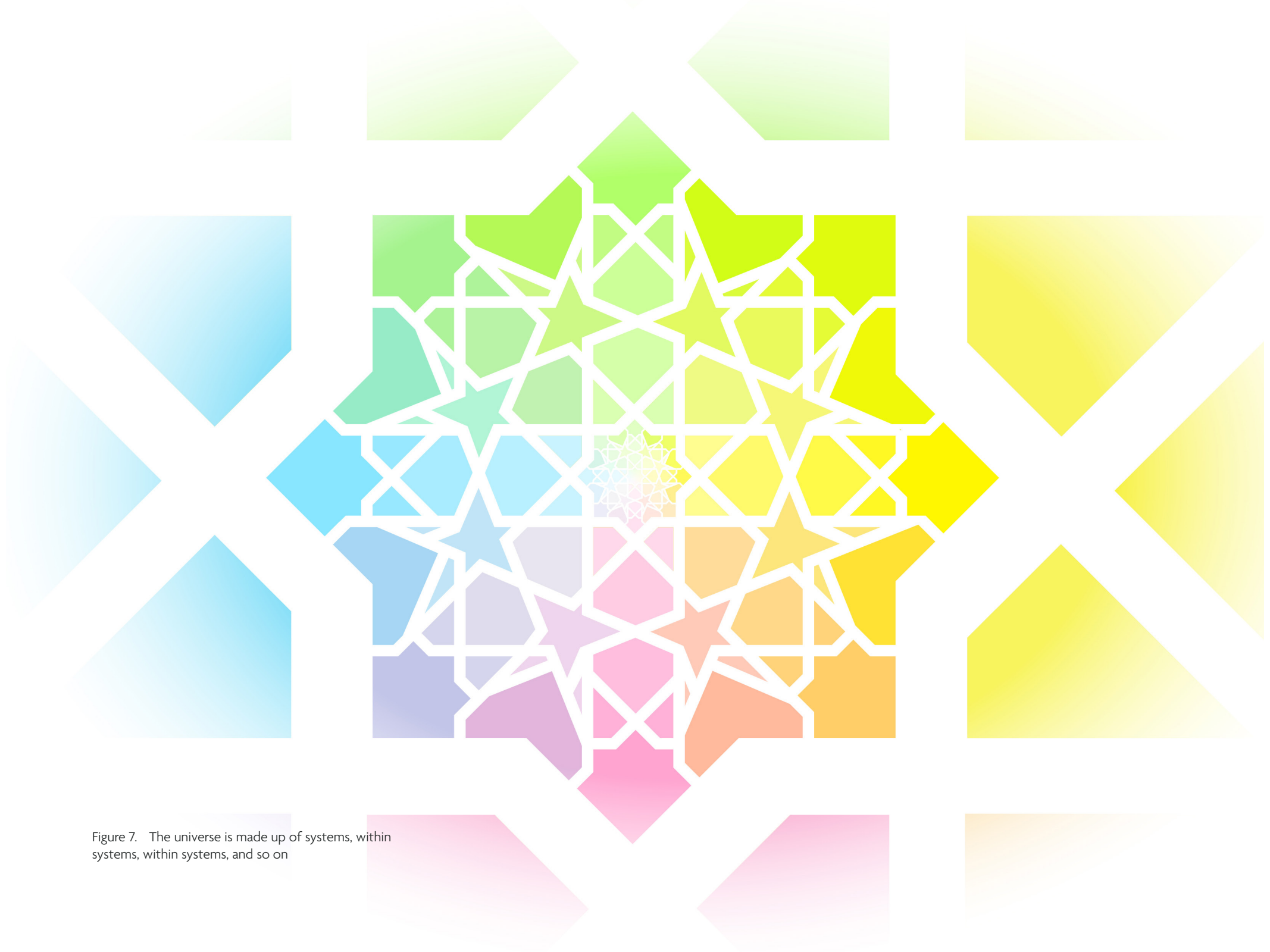
Figure 7. The universe is made up of systems, within systems, within systems, and so on

Approaches to Research

In this research, I employed a two-dimensional framework that merges reflective and holistic methodologies. Reflective methodology is integral to my decision-making process as a designer, particularly when engaging with participants. It highlights ethical considerations, reflection and accountability. Holistic methodology involves comprehensive, cross-system explorations, aiming to achieve an in-depth understanding of the system under study. This approach facilitates systemic thinking and simplifies analysis of the intricate interconnections within systems. While the holistic method helps me explore the notion of interconnectedness within systems, the reflective methodology enables me to study the Scarcity and Abundance mindsets. These methodologies, therefore, complement each other, with one emphasizing an analytical perspective and the other focusing on emotional intelligence.

Reflective

My general approach to this work is grounded in the teachings of Adrienne Maree Brown's "Emergent Strategy" and Robin Wall Kimmerer's "Braiding Sweetgrass." These concepts acted as a guiding compass in making design decisions impacting participants.

Moreover, I ensured my commitment to these concepts through ongoing self-reflection sessions (Fig. 8). In doing so, I benefited from the guidance of my therapist. These sessions helped me look beneath the surface of my choices and subsequent actions in response to emergent project discoveries. However, I can not isolate how each concept impacted my projects individually. Rather, I used my intuition to navigate different aspects of my projects after immersion into these authors' works, aware of their impact on my thinking process. I chose this method because it enabled me to reflect on how I, as an individual, can walk towards change so that I could support others in walking this path with me. Furthermore, I

used reflection on my collaborative projects and encouraged participants to do so as well. These reflections helped us identify our collective goals in creating win-win interactions and move towards them.

Here are some examples of those concepts:

Fractals	Fractals are complex and self-similar patterns that reappear at different scales. They explain how large systemic patterns are similar to what we experience at smaller scales and reverse. What we practice at a small scale can replicate at larger system scales and change them. Therefore, it signifies thay how we behave matters, not just as designers but also as individuals (Brown, 2017).
Interdependence	Kimmerer uses the three sisters, an indigenous farming method, to describe how corn, bean, and squash plants reciprocate with one another and rely on each other to flourish. Brown explores how interdependence combined with power decentralization can help us address the negative aspects of economic competition (Kimmerer, 2013 & Brown, 2017)
Non-linear and Iterative	In creating systemic change, we must learn to work with the system, not against it. Systems are complex and non-linear. The processes in a system are explained in complex cycles and loops. Therefore, Brown believes that changing systems also require embracing complexity and creating change in non-linear and iterative processes (Fig.8) (Brown, 2017).

Figure 8.   In a studio project, I used crochet diagrams to display systemic interconnectedness and my understanding of complexity. As the diagrams became more intertwined, crocheting them became harder, mirroring the complexity of natural systems.

Holistic

To better understand the systemic complexities, I conducted research at three different scales: (1) I studied an individual's barriers or motivations for reciprocity through auto-ethnography (Fig. 9); (2) I researched reciprocity among a small group of people in a community at The Roots Union community garden (Fig. 10); and (3) I worked within the Circular Food Innovation lab (CFIL), where we used similar theories to change Vancouver's food system. In CFIL's projects, we designed reciprocal interactions as well. Therefore, I had the opportunity to explore this topic with a wider lens at the systemic level and map the finding with the other scales (Fig.11). Here is the list of these projects and the design methods I used in each one:
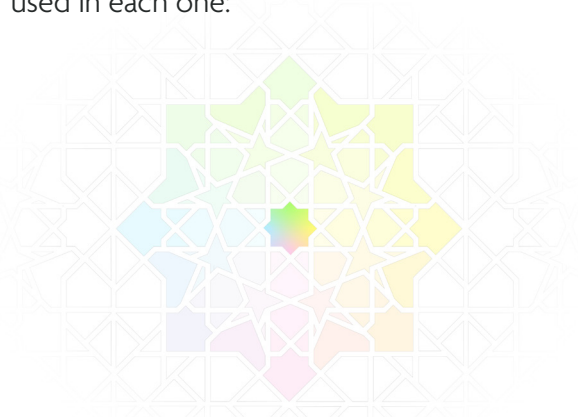

Figure 9.   Individual Scale

Figure 10. Community Scale
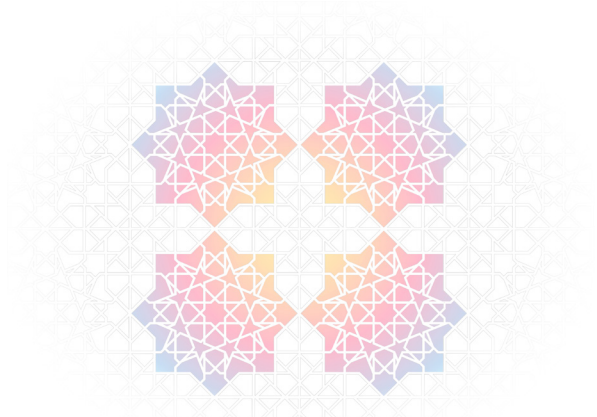
Figure 11. System Scale

1. **Individual Scale: A Gift**
   Auto-ethnography
   Journaling
   Diagramming
   Reflective self-analysis

2. **Community Scale: The Roots Union**
   Collaborative design
   Collaborative gardening
   Tool design
   Graphic design

3. **System Scale: Fractals**
   Throughout the CFIL project, we used numerous systemic design methods, including Iceberg mapping, Feedback loop designs, Surveys, Interviews, and many more. However, in this chapter, I will use the concept of Fractals to highlight the similar patterns I noticed in all projects at different scales.

13
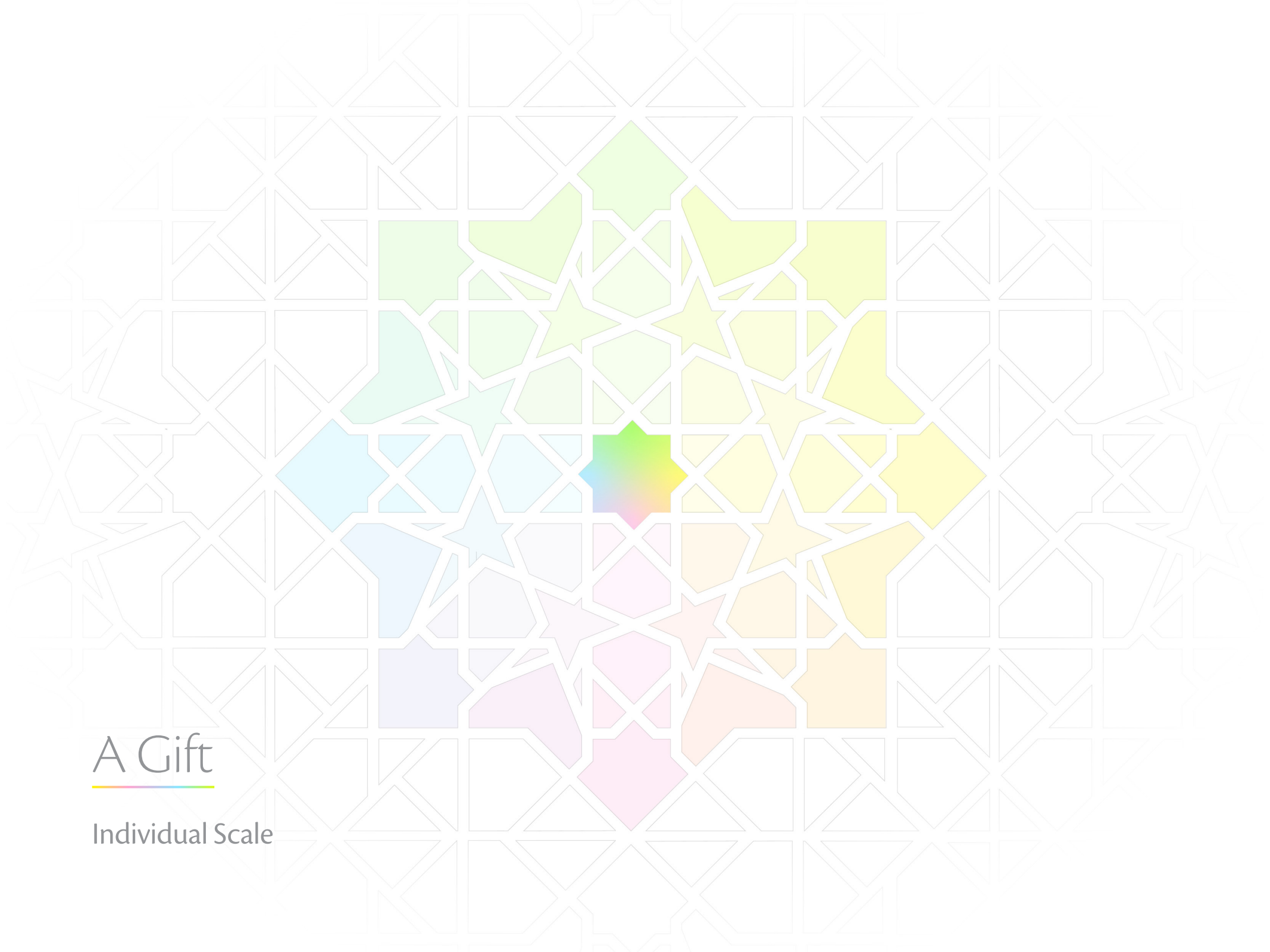
A Gift

Individual Scale

Intro

This chapter highlights my personal experiences as a designer and an individual who, like all, has complex interconnections with her social network. In this chapter, I specify how my positionality and cultural background influenced my interest in designing reciprocal interactions. Furthermore, I explain capitalism's role in shaping my mindset and explore self-reflection as a tool to understand and change it.

This chapter is a doorway to my perspective and vision. In communicating my research, I repeatedly relied on my visualizations of Shamseh, a concentric Islamic art pattern. I used Shamseh to illustrate fractals and different scales of a system explicate my abstract ideas and vision. With this text, I gift you my eyes, or an insight into my perception that resulted in using Shamseh for this purpose. This gift helps you identify cosmological interconnected patterns and acknowledge their critical role in change-making.

Insights From The Outside

I moved from Tehran to Vancouver in August 2021, at 25, pursuing a brighter future. In the past century in Iran, imperial conquests of the US, Europe, and Russia intensified conflicts leading to the Islamic revolution, the Iran-Iraq war, and ongoing oppression. These conflicts, coupled with deeply rooted patriarchal mindsets, have shaped a generational trauma my age group inherited from our ancestors. Since I come from a relatively conservative family, these circumstances made my life as a young woman difficult and encouraged me to immigrate abroad. However, it did not take long for me to realize I had envisioned an overly optimistic illusion of my life in Canada. This cognitive distortion is a coping mechanism common among the Iranian youth diaspora. Similarly, I had created an excessively negative perspective on my life in Iran without truly understanding how much my essence intertwined with my social network and emotional ties in my home country.

In Vancouver I was no longer forced to wear hijab, and while the wind in my hair made me feel free as a bird, I could not help but feel alienated and detached from my community. I always assumed I would be me; no matter when or where, what makes me, me, is within, and I will carry it just as I carry my hands and feet. That was not the case. Like millions of other Iranians, I felt displaced after leaving my country, knowing I could not return– a significant difference between my journey as an international student and most of my peers. Hence, these internal contradictions led to homesickness, depression, and anxiety (Fig. 12).

Even though Vancouver is multicultural and welcoming, it is a visibly segregated city, as different ethnicities form concentrated communities. Not knowing many Iranians in Vancouver and a disparity in my experiences and my peers left me feeling marginalized. So, I resorted to solitude. No matter how hard I tried, I could only watch the city from the periphery for a few months. So I began observing it from the outside. My therapist helped me notice and reflect on the differences between my life in Canada and Iran to reposition myself in the new environment. She pushed me to face all the consequent negative emotions I was trying to suppress. I was impatient to live a peaceful and happy life and did not realize that it is only attainable by experiencing all feelings, negative or positive. Thus, being a minority
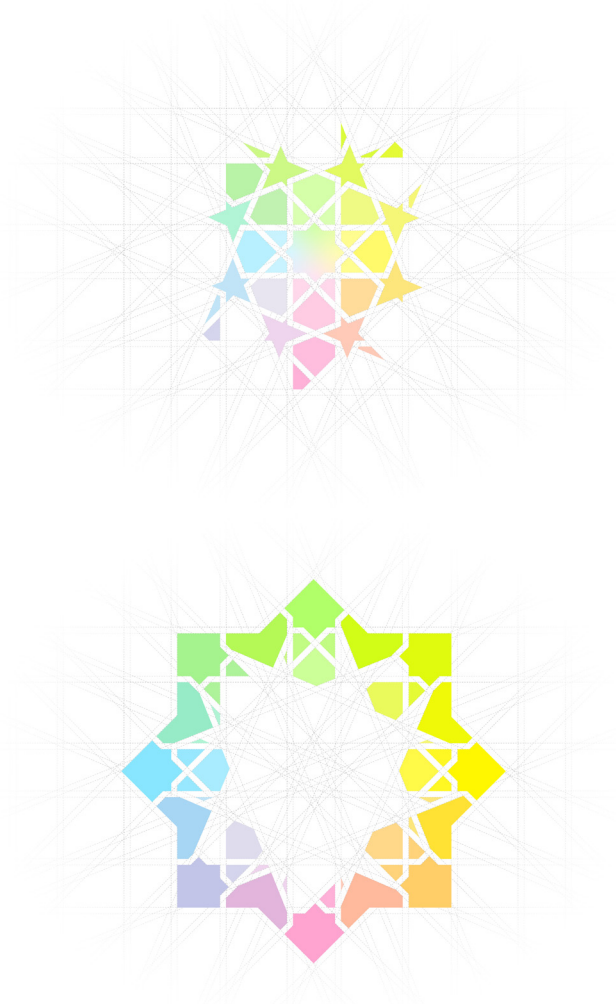

Figure 12. After migrating to Canada I felt like I have left most of my community and connections behind. The top figure shows me and a few of my connections separated from my community.

for the first time in my life forced me to reflect deeply on myself, my background, and my current relationship with a new city and culture.

During this time, I started my Master's explorations on our interactions with food. Food was and still is my family's and community's most visible form of connectivity. Thus, it was one of the first places I noticed the difference between life in Iran versus Canada. For instance, I was curious about the role of self-serve checkouts in minimizing the need for human-to-human interactions in Canadian shopping experiences. Shopping for food in Iran remains a personal interaction between vendors and consumers (Fig. 13, 14). In Iran, shoppers do not purchase produce per item or small packages; we buy almost all perishables in bulk. Perfect or imperfect, that is what the neighborhood market offers and what most people prefer.

Of course, we have stores selling A-grade produce where you can choose items. However, they are often expensive and unaffordable for the majority. Coming from an upper middle-income family in Iran, a close-knit and traditional one, I recalled that my parents nor my relatives purchased food at selective shopping stores. It was not a matter of affordability in their argument. It was about decency; they used to rhetorically ask: "Why should only the vendor and farmer suffer from bad weather, pests, or other factors affecting the year's harvests?"

Despite the Islamic regime's efforts, Iran's closed and previously inward-looking culture is becoming increasingly Westernized and individualistic in the digital age. Post Covid-19 individualism has become more prevalent than ever before. However, mutualism remains a value for some, especially my traditional family, in which, only three generations back, our ancestors lived in poverty as farmers. My upbringing was especially strict about generosity, maybe too strict. "Not everyone in our community is as fortunate as us, so we must always remain humble and share," my parents claimed.

In summer, the branches of our garden's cherry and plum trees touched the floor with a heavy yield. While the birds were chirping, we picked the fruits for my mom to make her famous Persian delicacy, Lavashak! She worked hours and hours with our little help to make enough for our close ones. She made little packages of Lavashak and took them to our relative's houses. However, she rarely came back empty-handed herself. They always had extra

Figure 13. Shopping experience in Canada

Figure 14. Shopping experience in Iran. Herbs are not sold prewashed and in packages. We buy in bulk, separate the edible and inedible (not just based on looks) and wash at home.

17

jars of pickles, jams or other things to share with us in return. At this point in her life, she receives packages of pomegranates, bread, herbs, jams, pickles, and so much more from her friends and family. And in return, they share so much with her. Living with her for twenty-five years provided a foundational education in lived patterns of reciprocity.

Therefore, feeling shocked and displaced after facing the reality of my life in Canada, my upbringing, depression, isolation, and my therapist's support in making sense of them all, put me in a unique position. It enabled me to notice the disadvantages of an individualistic lifestyle and experience them as an outsider who has not grown accustomed to the daily activities in this new environment. There is no doubt that, for decades, Canadian scholars have identified and investigated the adverse effects of capitalism, including individualism. However, my arrival as a newcomer positioned me outside, looking into the social system. I believe this has given my perspective a different quality that implicitly affects my research in this field and might result in other insights into the matter.

Figure 15. Mom's famous sun-dried Lavashak

Embracing Vulnerability and The Unknown

As I began to notice more and more examples of individualism in Canada, where capitalistic mindsets prevail more than in my home country, I soon realized that, I too, had and still, to some extent, have many of these same mindsets ingrained in my life. For instance, my design practice was mainly self-directed rather than community-informed; I was outcome-oriented instead of process-oriented, and I considered design as nothing but strategic problem-solving.

The Action Research journal's board statement "What is good action research: Quality choice points with a refreshed urgency" argues that reflexivity is one of the indicators of quality in action research projects. This statement notes that we incorporate personal, relational, and impersonal knowledge in creating the aspirational world of participants in social change projects. Therefore, authors (aka. designers and collaborators) must take a self-critical approach and define their role as the change makers in these projects (Bradbury et al., 2019). Many other resources in social innovation and design research mention the critical role of self-reflection as the designers' decisions and actions directly affect communities. This approach to design was never introduced during my academic journey in Iran. Hence, to spot my limiting mindsets, I must consistently use self-reflection to uncover the root causes of my decisions.

Reflecting upon my embedded assumptions I soon realized my reluctance to feel and express my emotions, valuing logic over sensations, choosing simplification over embracing complexity, and separating my work and personal life were the sources of my limiting mindsets. I was showing up to projects as a 'professional' designer instead of a personally invested collaborator. I assumed my personhood was irrelevant to my work. This stems from a capitalistic work culture that frames professionalism as blocking emotions, not allowing them to interfere with work, and possibly reducing productivity.

My therapist helped me realize how capitalism enforces a "not enough" mentality. This mindset replaces abundance with a fear of scarcity– of resources, time, and achievements. Instead of nurturing my self-esteem, it was making me feel like I never was enough or did enough, which also contributed to my depression. So, at this point, my therapist gave me the

final push I needed when she said: Why are you holding on to these beliefs so hard? Why don't you just let go of all your assumptions, lose control and become vulnerable and see where might lead you?

With her help, I slowly let go of the comfort zone I had made with these self-destructive mindsets. However, I must admit that it was not an easy journey. Unleashing negative emotions that I had suppressed in order to be productive required confronting and processing them head-on. Furthermore, changing my belief system would demand "Reframing" vulnerability as strength and stepping into ambiguous and unfamiliar territories. Reframing entails intentionally choosing to perceive a situation or a concept with a different perspective than the one we usually hold (Paton & Dorst, 2011, p. 573) We can use Reframing across different system levels to disrupt the narrative for ourselves and others. It helps us explore challenges through different viewpoints and perceive them as opportunities as a way for humans to choose which stories to reinforce and inform our actions and ways of being together.

Embracing self-compassion and self-care techniques, such as mindfulness meditation, I realized that doing this work requires courage to face fears, determination, patience with oneself, ongoing self-reflection, and lots of Reframing. Reframing the scarcity mindset with abundance entails facing some entrenched fears, such as the fear of falling behind in the competition and the fear of non-conformity. I noticed the same fear in my other projects as well.

Fear is a barrier to change-making, and I could not force anyone to face them when they are not ready. However, I could change the narratives and reframe some of these fear-evoking mindsets and stories. At least, there is hope for us to change our world by starting the change from ourselves and reframing our fears, as Adrienne Maree Brown (2017) puts it beautifully:

"All of this imagining, in the poverty of our current system, is heightened because of scarcity economics. There isn't enough, so we need to hoard, enclose, divide, fence up, and prioritize resources and people.
We have to imagine beyond those fears. We have to ideate—imagine and conceive—together."

—Brown

Swimming Against The Tide

Scarcity thinking, and the fear that comes with it, is so prevalent that it compromises our ability to act with generosity, despite a common valuing of generosity over selfishness. Regardless of the context, we attach a positive connotation to "generosity" and a negative one to "selfishness." The problem is that fear is such a strong emotion that it is often paralyzing. Therefore, it is not easy for all to initiate reciprocity when scarcity is the dominant paradigm. Thus, I took it upon myself to take the first steps toward developing reciprocal interactions in my projects. Due to my culture and upbringing, I was already quite comfortable with sharing. So, I began to wonder if I truly hold generosity as a value or if it is my people-pleasing trauma response. I sought my therapist's support to decode my intentions in different situations throughout my projects. This made me pay more attention to the context of generosity and selfishness.

Self-reflection in therapy helped me come to the conclusion that I do hold reciprocity as a value; however, I also sometimes feel guilty about putting myself first. I forced myself to seek support from others too. Allowing others to respond and reciprocate was critical in my thesis since, after all, reciprocity is a two-way street. Showing vulnerability was not my strongest suit. However, expressing vulnerability helped me foster intimacy with those participating in my projects and my social network. On several occasions, I realized that building these intimate and genuine connections played a significant role in the process of change-making. In some cases, I believe it had a greater impact compared to the tools and materials I designed. In the following chapters, I will provide examples of these experiences.

Finally, I wish to note that I started my Master's in a lost and confused state of mind, but designing for reciprocal interactions affected me maybe far more than others. Acknowledging my background, reflecting on myself, and fostering intimate relationships helped me overcome depression and anxiety. I no longer feel isolated, even though Vancouver is still the same city. My projects helped me form communities and feel a sense of belonging that was missing in my life.
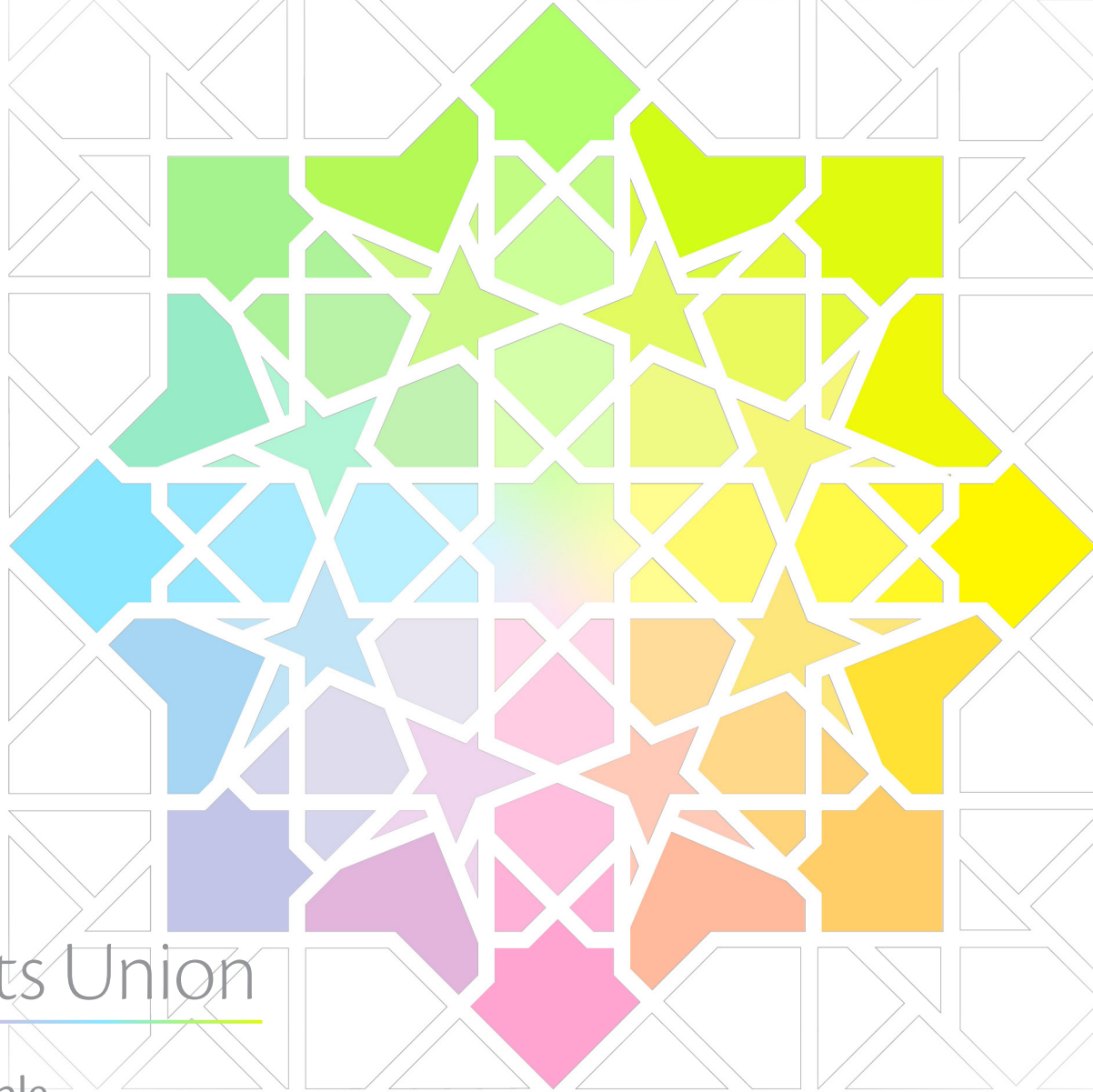
The Roots Union

Community Scale

Intro

The following chapter plots the path of development of The Roots Union (TRU), a collective community gardening project initiated in 2022, located on the 4th-floor patio at the Emily Carr University campus (ECU). As a founding member, I hoped the garden to be a place to encourage reciprocal relationships among the members and ECU departments toward the creation of a welcoming, inclusive, and nurturing space to connect with more-than-humans and nature. In this project, we– a loving group composed of staff, faculty, and students– co-created a reciprocity-based and horizontal organizational structure. However, despite its current flourishing, bringing it into fruition was anything but easy and presented many challenges along the way.
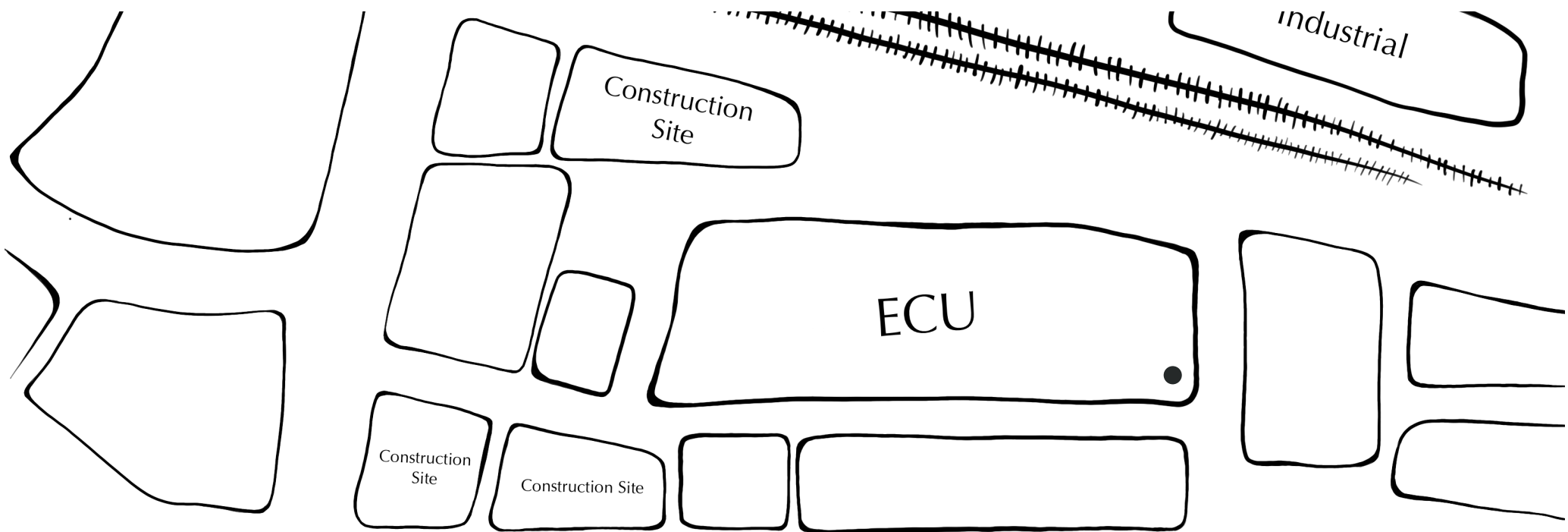

Figure 16. Emily Carr University location and the south facing patio location marked with a black dot

Weeding

Emily Carr University of Art + Design is located in a semi-industrial zone in Vancouver, located on the unceded homelands of the xʷməθkʷəỳ əm (Musqueam), Skwxwú7mesh (Squamish), and səlilwətaɬ (Tsleil-Waututh) peoples in East Vancouver (Fig. 16). ECU moved to this single-building purpose-built campus in 2017, and while the school is equipped with top-notch tools and technologies, access to green spaces – a recognized source of inspiration for artists and designers – is very limited on campus or in the surrounding areas (History + Evolution, 2021). In 2018, ECU's Counselling, Wellness & Accessibility Office turned the south-facing 4th-floor patio into a small garden on the campus for the students to enjoy sunlight and greenery (Molčan, 2019). However, internal controversies over stewardship and access to this space led to the space's closure in 2020. Planter boxes were abandoned and access to the space was further restricted.

When I arrived at ECU in 2021, the garden was abandoned (Fig. 17) and filled with weeds and dead plants. Students did not have access to the 4th-floor patio, despite several requests. To salvage the gardening resources, Emily Carr's Student Union had spent considerable funds to move some planters to the north-facing 2nd-floor balcony. However, they needed help finding dedicated students who could regularly take care of the plants. Therefore, in the fall of 2021, you could encounter idle gardening items scattered across the campus, hear students, staff and faculty's disappointment with the patio's restrictions, and perceive the origin of this problem as something larger and more complex than the logistics of accessing the patio Throughout my project, this complicated history of territorialism had a significant impact on my decisions and actions.

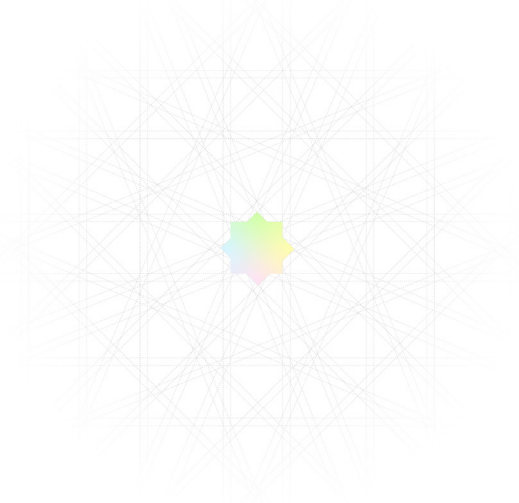
Figure 17. Abandoned planter boxes before TRU

Figure 18. The Roots Union Community Garden Diagrams- The gardening space was the first element of our community.

    The Garden Space

Planting

I started this project when researching gardening as an approach to exploring food, which is what led me to finding out about the student union's need for help with maintaining the planters on the 2nd-floor balcony. Since my peers showed interest in pursuing gardening with me, I began investigating the possibility of moving the boxes to their original location on the 4th-floor patio, giving us access to more sunlight throughout the day. However, this investigation led to unexpected discoveries about the university's internal power struggles (Fig. 19), and a new research question emerged:

How might we design strategies to overcome power struggles and barriers to collaboration so that we could all enjoy this gardening opportunity?

To get permission for the boxes' relocation, I needed to find out why the garden was abandoned in the first place. Speaking with multiple parties involved, such as the Space Committee, Student Wellness, and Student Union, revealed an inconsistency in people's perspectives. For instance, while some people referred to "students leaving cigarette butts in the planter" as the reason the garden had to close, others mentioned "a disagreement over who gets to use the space". Instead of relying on one narrative, I tried to listen to several stories and see the problem from varied perspectives. Gradually, I realized ECU's hierarchical organizational structure was limiting the possibilities for a collaborative gardening program. For instance, bureaucratic processes demanded a single department take full responsibility and be accountable to the university, leading to territorial competition. These restricting perspectives made shared responsibility for the garden an unimaginable possibility. This is an example of the either/or thinking (Clare et al., 2019) that limits our capacity to reimagine and, therefore, our opportunities for other ways of being and acting.

To address these territorial mindsets, I again used the Paton and Dorst's design method of Reframing (2011), which redefines a problem space as an opportunity, in order to increase a project's chances of progression and success. Reframing is essentially a tool for disrupting stuck mindsets that can prevent challenges from being perceived as an opportunity.
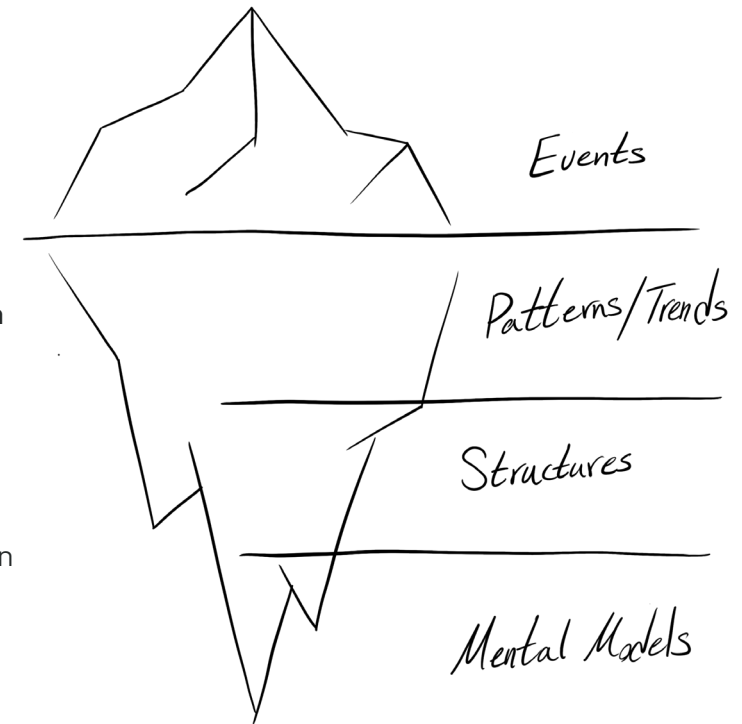

Figure 19. Iceberg mapping tool helps designers dig deeper and deeper to find the roots and underlying mindsets causing a problem.

Thus, I designed a contrasting structure for the garden that was more aligned with its purpose of encouraging inclusive and caring mentalities. Specifically, I proposed a different perspective on this rivalry by redefining the gardening space as an independent and self-directed organ, functioning based on principles of mutualism, or through reciprocity-based internal and external interactions. Additionally, in writing the proposals for the new gardening program, I emphasized the pedagogical potential of a gardening program at ECU. For instance, students can use the garden to research and explore through direct interactions with nature.

Collaboration with ECU staff helped establish the garden as an open and inclusive environment that welcomes all ECU members, including students, faculty, and staff. At the time, a group of library staff involved in the university's Climate Action Task Force was also trying to get access to the garden. Instead of choosing the simple and easy approach of competing with them, we decided to embrace the complexity and work with the other initiatives rather than against them. This lucky coincidence was working to my project's advantage as it was a chance to show other ways of working and growing in the university that were not explored before. However, the university permitted us to use the space and this collaboration with a challenging condition. The space committee obligated us to move the planter's soil from the second-floor planter boxes to the fourth-floor patio ourselves (Fig. 20). This was unexpected and hard manual labor, but carrying it out together was the first collaborative action that helped us form a strong bond (Fig. 21). Thus, we made our original founding group in the spring of 2022.

Figure 20. Giulia and Yejin helped me in the spring of 2022 to empty the dirt and relocate the boxes from the 2nd-floor balcony to the 4th-floor patio
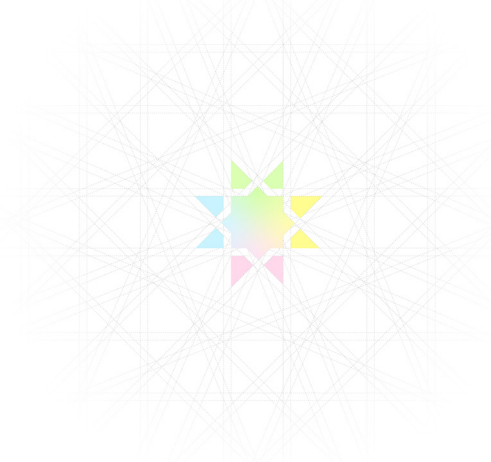
Figure 21. The Roots Union Community Garden Diagrams- The founding members gather around the garden and form the initial group.

The Garden Space

The Founding Members

Cultivating

During the first growing season of The Roots Union community garden, we garden members organically formed a collaboration around the shared value of reciprocity. Instead of implementing rules and punishments as parameters for our interactions, we started working together on the premise of reciprocity and the expectation of mutual respect. For instance, instead of scheduling the watering task and evenly distributing the work among the members, we all contributed depending on our availability. However, the garden was watered every day because ,as a garden member shared in an interview,* "knowing others were relying on us motivated us to participate more."This was the outcome of a shared group agreement that set the tone for our collaboration. Group agreements is a collective understanding of all members' expectations from the collective that will govern their interactions and collaborations (Fig. 22). To better understand and support reciprocity among garden members, I undertook a role to thoughtfully observe and carefully design infrastructure that would support communication and collaboration (Fig.23). These design interventions that supported our collaboration during the first growing season included visuals (Fig. 23), an invitation poster (Fig. 25), Slack channel (Fig. 26), Miro board (Fig. 27), a group agreement and a sign up Google form (Fig. 28).

Figure 22. The Roots Union Community Garden Diagrams- Collaboration based on a group agreement rather than rules annd penalties.

- The Garden Space
- The Founding Members
- Group Agreements: premise of reciprocity, mutual respect

"knowing others were relying on us motivated us to participate more."

–TRU Member

Figure 23. Visual identity introduces the garden as an independent organization.
1. One of the most-voted names for our collective
2. Represents the communal nature of our work and indirectly points to the reciprocal interactions between plants and trees through their roots. A complementary relationship between two roots that together make a unified whole.
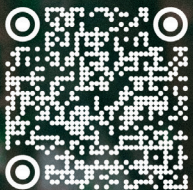
* Participatory research was completed in compliance with ECU's Research Ethics Board
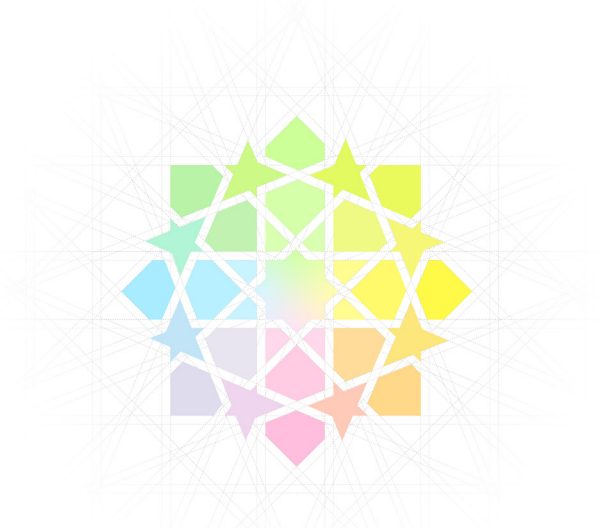
Figure 24. The Roots Union Community Garden Diagrams- My design contributions along with the more valubale member's contributions are the nexr round of elements forming TRU as an organization.

- The Garden Space
- The Founding Members
- Group Agreements: premise of reciprocity, mutual respect
- The Design materials and tools that I introduced to the community
- The participants contributions, including gardening, watering, communicating, and sharing food and harvest

Figure 25. The poster announces the garden's reopening and prompt the ECU community to participate in this gardening program.
1. The picture shows gardening in an imperfect and natural environment to illustrate the messiness, the dirt, and the labor as aspects of the gardening adventure.
2. Inviting language inviting to reciprocate with plants and other beings in the garden and the QR code directed everyone to the group agreement Google form
3. This logo was later redesigend into a simpler version

29
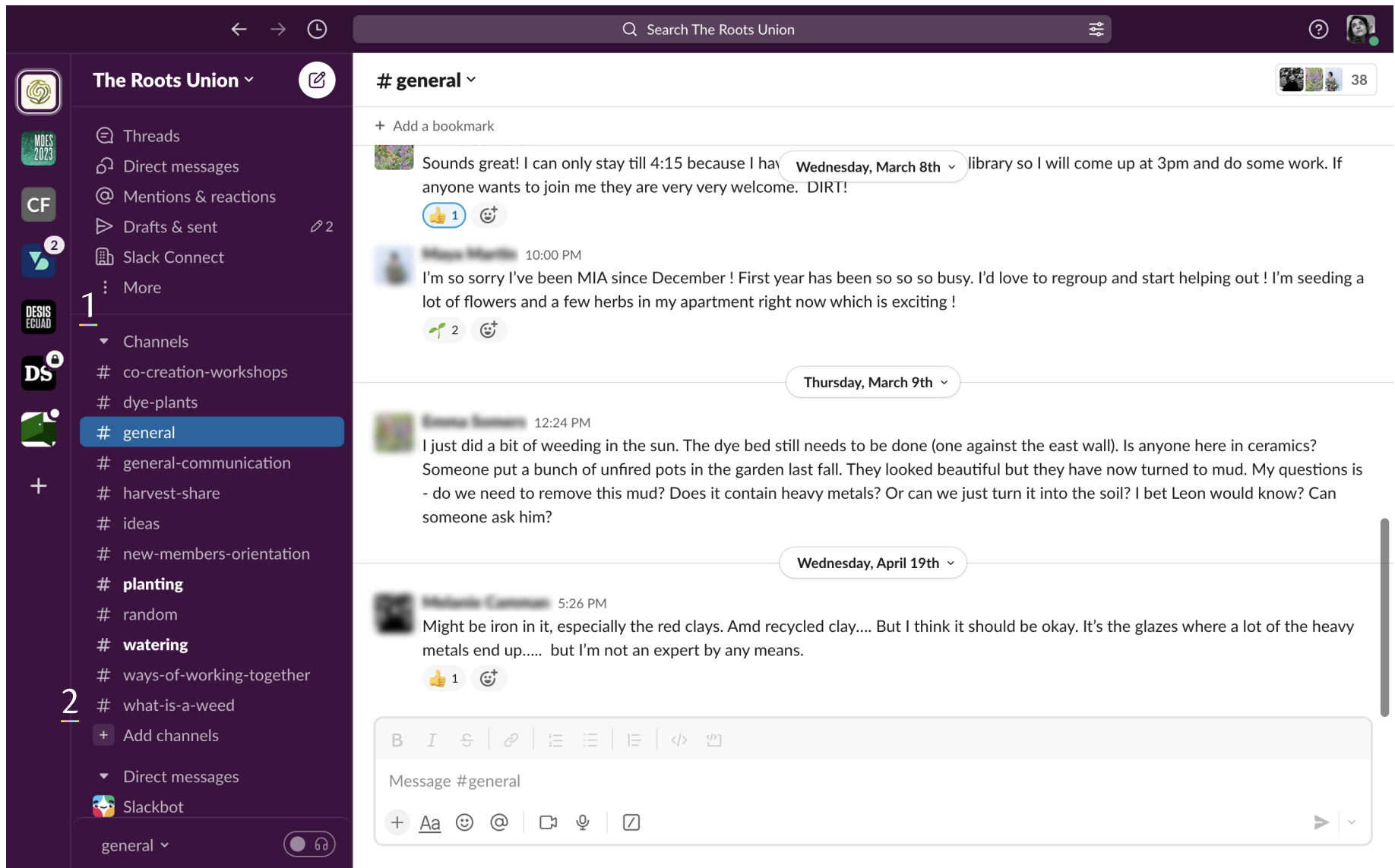
Figure 26.　　　I created a working space for our communications using Slack, a popular application in ECU. Participants voice their opinions at any given time, collaborate asynchronously, and learn about emerging needs and opportunities for reciprocation.
1. Several channels for various gardening collaborations required communication
2. @what_is_a_weed, a channel to help us learn the differences between varieties of weeds, identify them, and de-weed the garden
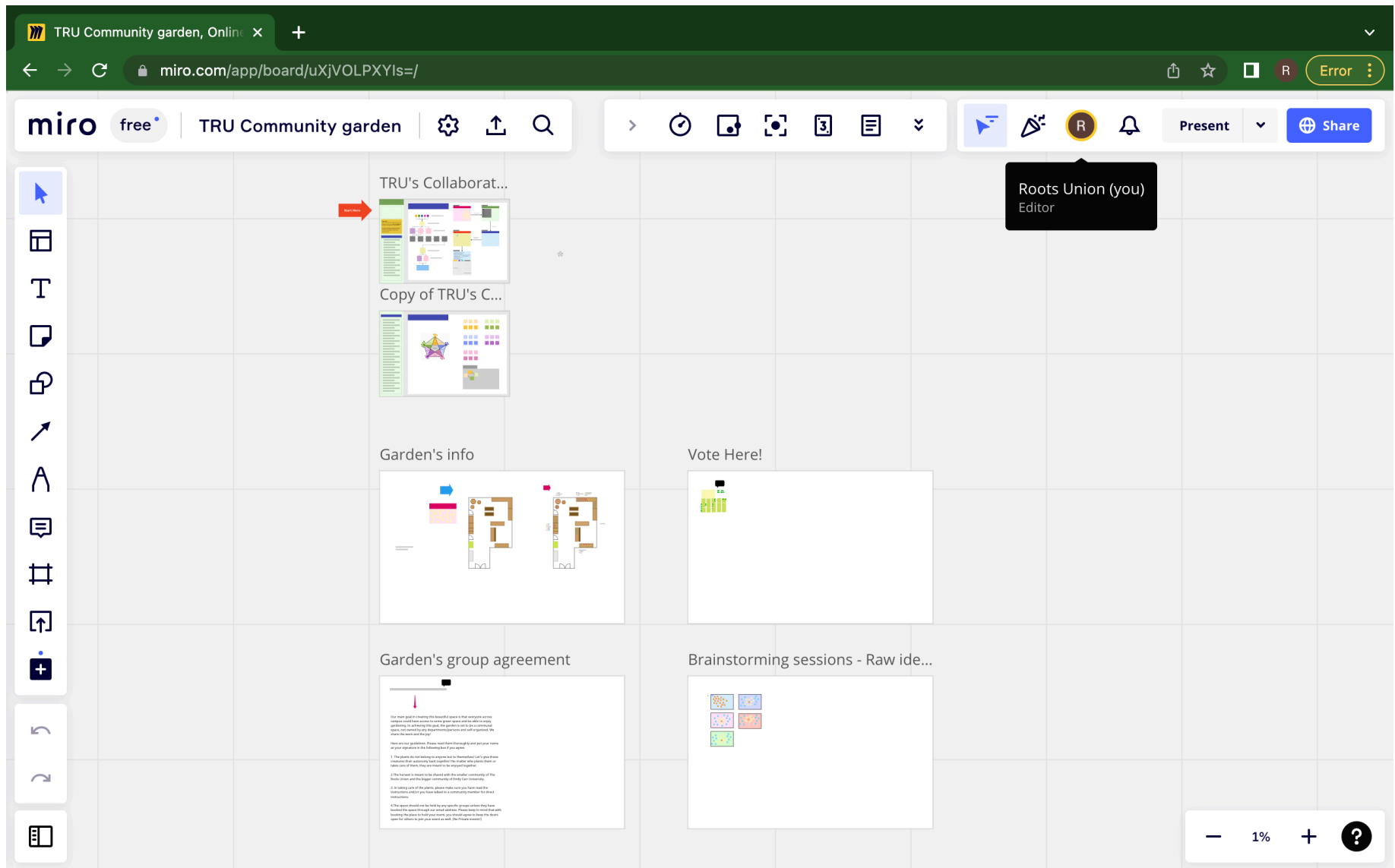
Figure 27. I used Miro, a free online collaboration tool with an unlimited workspace for asynchronous collaboration, to facilitate TRU's collaboration. As the project's designer, I created Gmail and Miro accounts for TRU and assigned ownership and full access to the board to this account in order to have a succession plan for the next generation of designers. Throughout the project, I gradually designed and added tools to this board, such as the garden's top-view plan

31

The Roots Union

So we hear you wanna get your hands dirty! Welcome welcome! Your journey of loving and caring for plants and other species starts here!
Please fill in the form for us and we'll contact you soon!
Photo by By Sára Molčan from ECU website

rootsuniongarden@gmail.com Switch accounts
Not shared

What's your beautiful name fellow green thumber?

Your answer

Could you please provide your email address for us, so that we'll add you to our slack?

Your answer

What is your role at ECU?

○ Student
○ faculty
○ Staff member

How did you hear about us?

○ Posters on campus
○ From a member of the garden
○ Through social media

Next

Never submit passwords through Google Forms.

This content is neither created nor endorsed by Google. Report Abuse - Terms of Service - Privacy Policy

---

The Roots Union

rootsuniongarden@gmail.com Switch accounts
Not shared

* Indicates required question

Our Group Agreement

Our main goal in creating this beautiful space is that everyone across campus could have access to some green space and be able to enjoy gardening. In achieving this goal, the garden is set to be a communal space, not owned by any departments/persons and self-organized. We share the work and the joy!

Here are our guidelines. Please read them thoroughly and put your name as your signature in the following box if you agree.

1. The plants do not belong to anyone but to themselves! Let's give these creatures their autonomy back together! No matter who plants them or takes care of them, they are meant to be enjoyed together.

2. The harvest is meant to be shared with the smaller community of The Roots Union and the bigger community of Emily Carr University.

3. In taking care of the plants, please make sure you have read the instructions and/or you have talked to a community member for direct instructions.

4. The space should not be held by any specific groups unless they have booked the space through our email address. Please keep in mind that with booking the place to hold your event, you should agree to keep the doors open for others to join your event as well. (No Private events!)

Do you agree with the group agreement? if so please sign with your name. *

Your answer

Back   Submit   Clear form

Never submit passwords through Google Forms.

This content is neither created nor endorsed by Google. Report Abuse - Terms of Service - Privacy Policy

Google Forms

Figure 28. I designed an initial and ever-evolving group agreement for participants to sign upon joining the garden.
Group agreements are helpful in democratically creating boundaries for our interactions by allowing every participant to use their agency in making these rules.
Highlights our core value of mutualism, which entailed shared responsibility and shared harvest, no ownership over plants or the space, and reciprocating with the community in any form we see fit.

Pruning

Through our collective efforts, TRU managed to maintain and sustain the garden without provoking any controversy in the first year. The garden itself was thriving, as were the core group of original members. However, as a community, we had trouble engaging the new members for active participation, forming strong bonds, and establishing a sense of belonging for those not part of that initial formation. We needed to define and formalize our organizational structure to better support new members' onboarding.

I noticed that the new members were intimidated by the closeness of the founding members, assuming we were "in charge". Based on Manzini's collaborative encounters framework (Fig. 29), the founding members showed higher "Active Involvement" and "Collaborative Involvement," their "Social Ties" were stronger, and they demonstrated more "Relational Intensity." In other words, they were more interconnected and intimate, contributed and reciprocated more, and felt free to take action. So, I wondered how I could intervene and facilitate their active participation to get the new members to the founding members' collaborative encounters position- from quadrant A to quadrant C in Manzini's framework.

Moreover, similar to many flat organizations, we found it hard to undertake more challenging tasks beyond the basic gardening requirements, and we could not explore many exciting ideas and opportunities. So, even though we did not encounter the same stuck patterns of territorialism, the first year's iteration of my community-building project surfaced other barriers to embedding mutualistic mindsets and changing behavioral patterns.
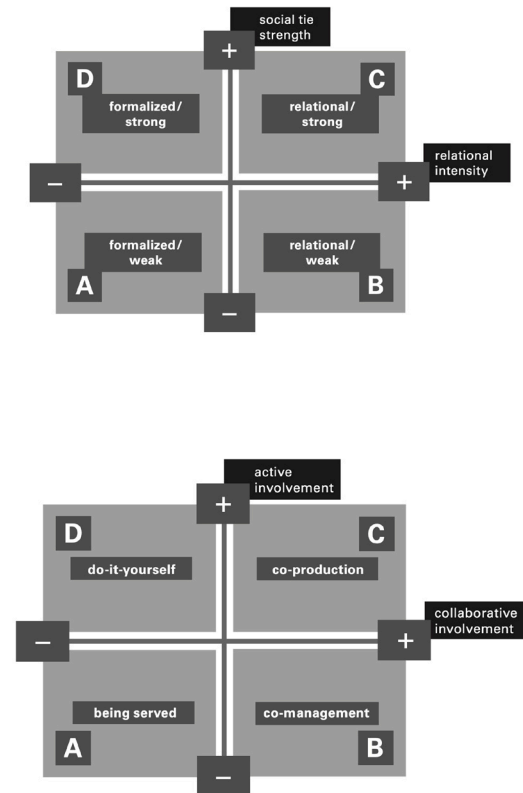

Figure 29. Manzini's encounters frame work. Retrived from: Manzini, Ezio, Rachel Coad (translator), Design, When Everybody Designs: An Introduction to Design for Social Innovation, Figs. 5.1 and 5.2, ©2015 Massachusetts Institute of Technology, published by the MIT Press.
Used by permission of the MIT Press.

Mulching

I believe one of the challenges in engaging new members for active participation was our minimal in-person interactions. Due to the members' conflicting schedules, our community depended on asynchronous collaboration and communication. Despite our consistent effort to promote participation, especially during harvest-share events- the get-togethers at the garden to harvest the produce and share it among ourselves– it was mainly the original founding group who attended the in-person events (Fig. 30-32). Gradually, the new members participated less in the online group conversations. These issues reinforced the importance of intimacy in engaging the participants in community-based change-making projects.

In response to these observations, I planned in-person events and co-creation sessions (Fig. 33) to bring people together, break the ice, and foster intimacy. Collaboratively, we designed the garden's structure and planned future projects. For these sessions, I designed a few collaboration prompts, ice breakers, and a Stakeholder Reciprocation tool (Fig. 34), and I served food and beverages (Fig.35). Tools are tangible or digital materials that designers create to serve a specific purpose. Collaboration tools, such as the Stakeholder Reciprocation tool, the Action Plan tool, and Ice breaker tools, are specifically designed to facilitate collaboration based on a specific project requirement. For instance, I started our first session with a quick icebreaker tool that prompted the participants to share personal perspectives and reflections by phrasing the sentences with the first person's point of view using I, me, and mine.

These co-creation sessions allowed us to spend more time together and bond over Ash (a persian dish), cookies, and tea. Serving Ash, a famous Persian dish shared with others on cold winter nights, was particularly important for me. This was a chance for me to honor the reciprocal interactions common in my culture and share something of my own with the garden collective. It was my way of reminding the tone of mutualism by showing generosity and initiating an act of reciprocity.
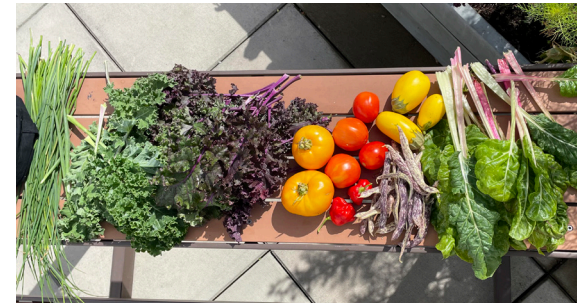
Figure 30. Harvest-share event, all the harvests Summer 2022

Figure 31. Harvest-share event, my peers watering the garden, Summer 2022

Figure 32. Harvest-share event, Yejin holding Tabacco leaves Spring 2022
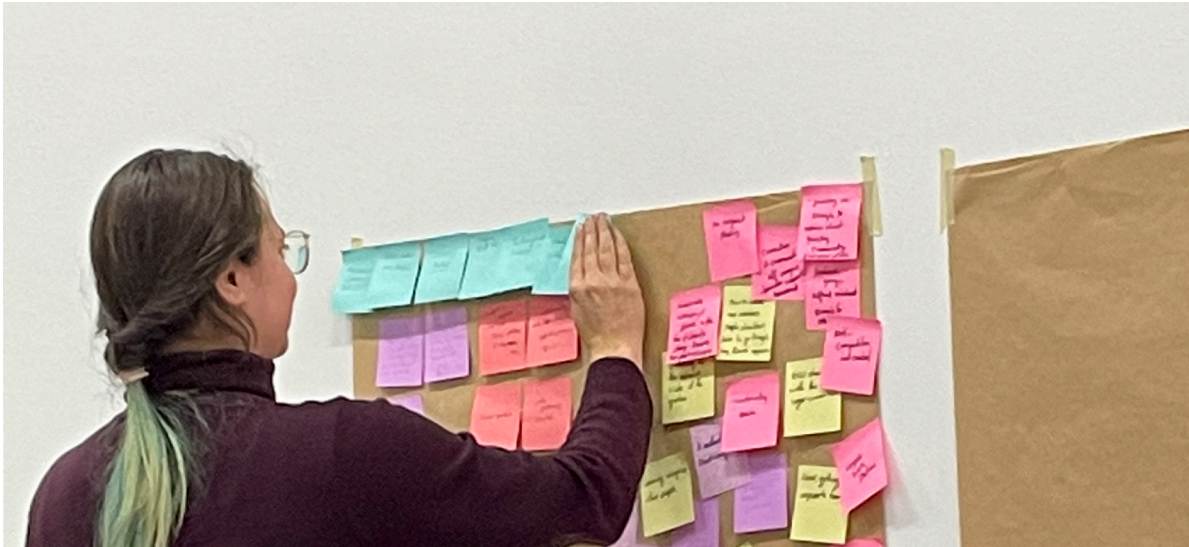
Figure 33. Melanie adding ideas during the co-creation session

Figure 34. Stakeholder Reciprocation tool created during the co-creation session
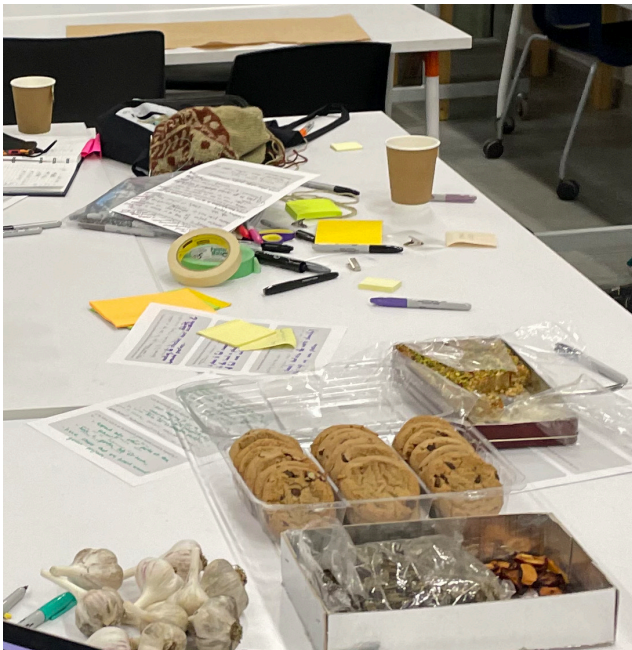
Figure 35. Food and beverages served during the co-creation session

Stakeholder Reciprocation Tool

I designed this tool after my search for stakeholder mapping techniques did not lead to anything specifically created for designing reciprocal interactions. Common stakeholder mapping tools classify individuals or parties based on their power and influence*. In my opinion, this approach to service design prioritizes stakeholders' needs with a higher status over less privileged groups, and reinforces hierarchical ways of thinking that perpetuate patterns of individualism. Therefore, I needed to design and test the appropriate tools to design services for a paradigm shift toward mutualism.

When designing for systemic changes, we deal with complex and nonlinear phenomena, and to convey them, we often use tools like feedback loops (Fig. 36). Feedback loops represent a circular way of thinking in which you can draw causal relationships that lead to consistent behaviors (Meadows, 2019). Thus, when designing this tool, I tried to avoid oversimplification in favor of staying true to the purpose, meaning designing a nonhierarchical tool that enables forming complex reciprocal interactions.
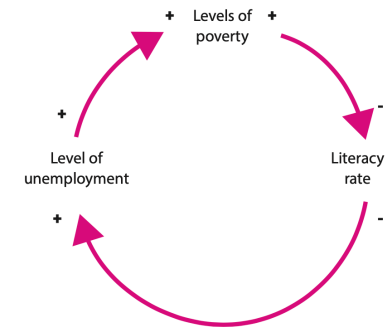
Figure 36. Feedback loops, retrieved from: www.strategicdesigntoolkit.com/feedback-loops, Solutions Lab website
Cropped from the instructions PDF
Creative Commons Link: www.creativecommons.org/licenses/by-nc/4.0/

* Please use this link for an example: https://www.boreal-is.com/blog/stakeholder-mapping-identify-stakeholders/

Here is a brief explanation of how Stakeholder Reciprocation tool works:

1. Start by listing all types of stakeholders involved in your organization. For instance, here is the list of TRU's stakeholders:

- 🔵 1. Active members
- 🟣 2. Supporters, for instance, the Climate Action Task Force and student union
- 🟣 3. University administrators and the Space Committee
- 🟠 4. Natural stakeholders, such as the more-than-humans in the garden
- 🟢 5. Next generations
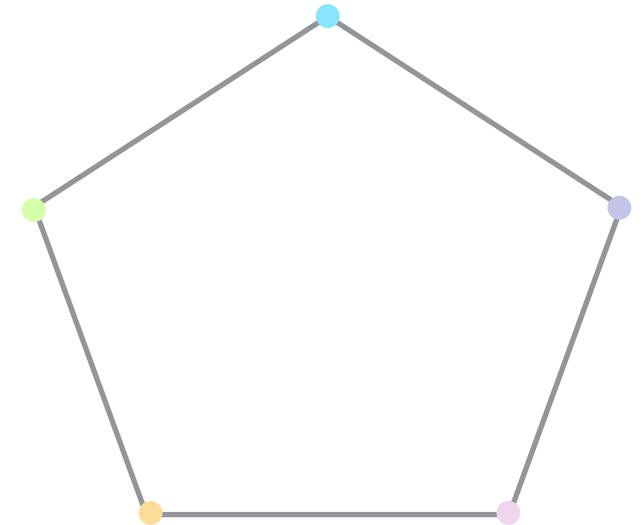
Figure 37. Stakeholder Reciprocation Tool, Step 2

2. Draw a polygon based on the number of stakeholders in your list (Fig. 37)

3. Connect each vertex to the second following vertex on each side to create triangles inside the polygon (Fig. 38).
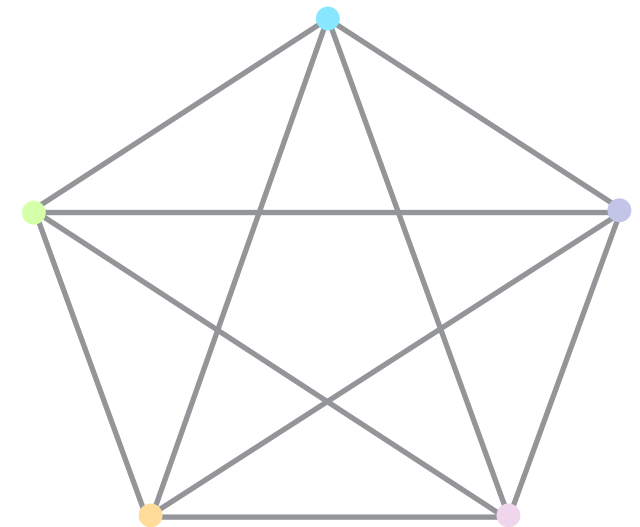
Figure 38. Stakeholder Reciprocation Tool, Step 3

4. Color and name the triangles created based on the example to show the needs and contributions of each stakeholder (Fig. 39).

5. After writing the possible needs and potential contributions of each stakeholder, use the middle space or a separate page to mix and match and find win-win interactions among stakeholders (Fig. 40).

Someone should set up a drinking station for the bees

Bees need drinking stations

We need pollinator bees

Bees polinate

Figure 40. Stakeholder Reciprocation Tool, Step 5

Active members

Contributions

Contributions   Needs

Next generations   Supporters

Needs   Needs

Mix & Match

Contributions   Contributions

Needs   Needs

Natural stakeholders

Contributions

University administrators and the Space Committee

Figure 39. Stakeholder Reciprocation Tool, Step 4

Stakeholder Reciprocation Tool

I designed this tool to help us:

· **Identify all the entities that could have an influence on this organization or be impacted by this organization**

· **recognize their needs and potential contributions**

· **design for reciprocal interactions.**

Instructions:

1. Start by listing any possible stakeholder in your organization
2. Group them into different categories
3. Assign each category a hue and write them on sticky notes or a shape in online tools as nodes
4. Connect the nodes
5. Use the attached triangles of each node to divide their needs and potential/known contributions
    a. Choose a lighter/darker shade of each node's hue to to colour a triangle attached to the node (for Needs)
    b. Choose another lighter/darker shade of each node's hue to to colour the other triangle attached to the node (for Contributions)
6. Choose a colour or and se the inner polygon to mix and match needs and contributions and design reciprocal interactions

You can either draw a big enough polygon to write down all the needs and contributions in the relative section or just use the polygon as your colour guide and do the listing and mix and matching on the side.

I hope this tool can help you find new opportunities for collaboration and reciprocity, and even connecting various stakeholders to form other reciprocal relationships through your organization.

Figure 41. Stakeholder Reciprocation Tool available with instructions on TRU's Miro board

Action Plan Tool

I designed this toolset (Fig. 42- 44) to facilitate TRU's collaborative task and project documentation, prioritization, decision-making, task assignment, and execution. This set of tools provides step-by-step instruction, guiding the participants to voice their opinions, find preferable ways to partake in tasks and responsibilities, and reciprocate accordingly. The Action Plan tool assembles all emerging actions and opportunities-related information in one accessible platform for all members, and thus, it provides transparency which is a critical factor in engaging communities in equitable change-making projects (Sangiorgi, 2015).

This tool is designed to empower the garden members to shape the experience they desire from TRU. It also allows the community to turn opportunities for reciprocal interactions among different stakeholders into practice. TRU has around 5-10 active members made up of roughly equal numbers of students and staff. Several occasional helpers and members also bring friends from time to time to help out in our group activities, such as planting, weeding, or harvesting sessions. The Action Plan tool helps all these people coordinate and collaborate on different garden-related projects. The following diagrams show how this tool works:

Figure 42. Action Plan Tool, Information Flow

Tool #1
Subject of Concerns or Opportunities

Do you have any issues/topics/ideas you'd like to be discussed in the next meeting? Please add them here!

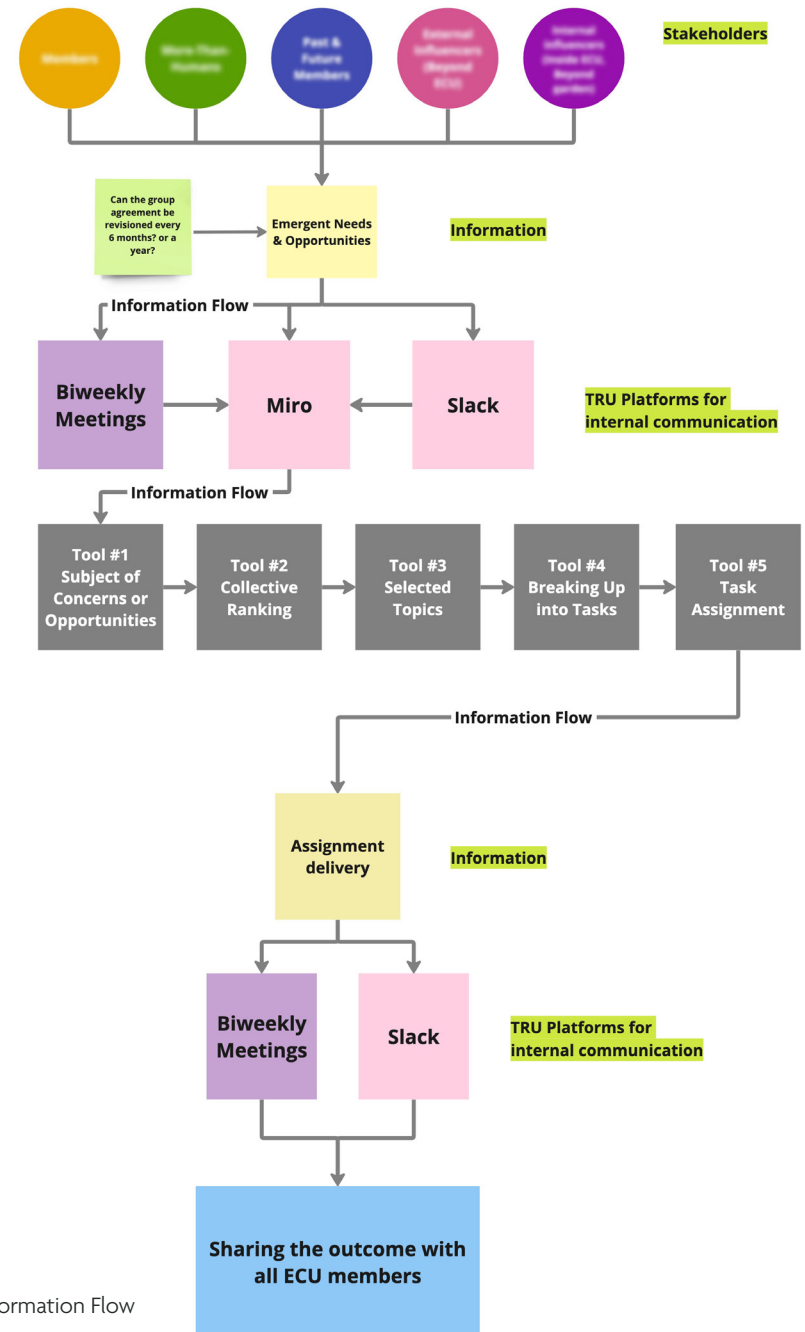Can the group agreement be revisioned every 6 months? or a year?

1 Idea Per sticky

1 Idea Per sticky

1 Idea Per sticky

1 Idea Per sticky

Tool #2
Collective Ranking

Prioritizing the topics

Write the topic here	Urgency 1 to 5	Cost 1 to 5	Effort -1 to -5	?	Total score
Write your name here					
Write your name here					
Write your name here					
Write your name here					
Write your name here					
Write your name here					
Write your name here					
Write your name here					
Write your name here					
Write your name here					
Write your name here					
Write your name here					
Write your name here					
Write your name here					
Write your name here					
Write your name here					

Tool #3
Selected Topics

Next meeting's topics

1 Idea Per sticky

1 Idea Per sticky

1 Idea Per sticky

1 Idea Per sticky

Prioritizing each meeting's topics and agendas based on collective ranking

Move the highest ranked topics here

Do we need any tools/ designs to be prepared before the meeting?

List each topic's requirements in the next box

Tool #5
Task Assignment

Upcoming Tasks!

Define **what** needs to be done, **who** is responsible, **by when.**

- Actions are decided during our group meetings.
- We can all chose the tasks we are comfortable with.No pressure! you don't have to do anything, you can still be a member but please keep in mind that we are trying to **share the responsibilities** and **distribute the workload**.

- If there was no deadline pre-decided for the task, please make yourself a deadline you are comfortable with to make sure our garden will move forward to achieve its goals.

Action What	Assignee Who	Deadline When	Notes Anything else?

Tool #4
Breaking up into tasks

To be prepared before the next meeting

1 Idea Per sticky

Requirement
1.
2.
3.

Figure 43. Action Plan Tool, Tools 1 to 5

Service Blueprint

This Toolkit is here to assist you with Roots Union Community Garden's :

1. Collective decision-making
2. Collaborative gardening
3. Response to emergent opportunities or concerns
4. Co-creations and collective project management

Talk It Out!
Please remember to use this toolkit just as a guide and rely on your **collective judgment** to adjust or change any or all procedures.

Community led projects depend heavily on emergent needs and circumstances and your collective judgment is your most dependable tool!

Action Plan

Action plan for emergent needs and opportunities is designed to assist you with collective management and task assignment.

Follow top to bottom
Level 1. Any stakeholder or involved person can introduce the community to a new need or opportunity.

Level 2. This information is passed to the community through any modes, in-person meetings, Miro Board or Slack, **But they should all end up here in Miro!**

Level 3. Step by Step action plan from, each step could be discussed during online or in-person meetings with any number of members available.

Level 4. Tasks would be delivered based on predetermined deadlines and they will be shared with through Slack or in-person meetings.

Level 5. Any outcomes from the community gardens efforts is shared with all ECU members. **Let's make a change through an act of generosity!**
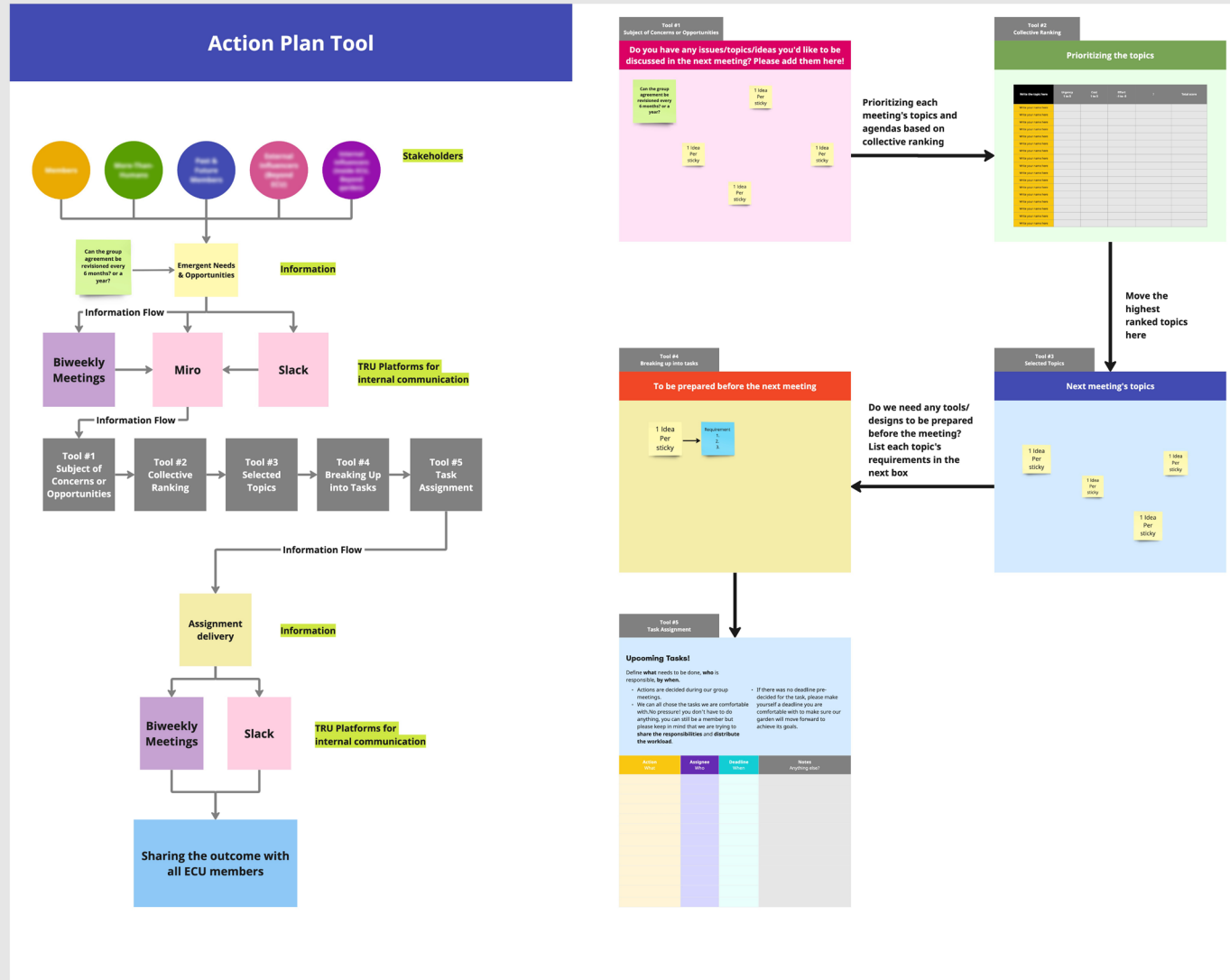
Figure 44. Action Plan Tool available with instructions on TRU's Miro board

42

Harvesting: Reflections on TRU

Through interviews* and group reflections on the The Roots Union, I learned that initiating reciprocity within a dominant competitive and individualistic culture of an institution such as a university is intimidating for many of us. We fear exploitation, because of our scarcity mindset, so we make individualistic decisions at the cost of others as a coping mechanism. Changing how we define and react to exploitation through Reframing enables us not only to shift away from an entrenched and stuck pattern, but also opens possibilities to influence a more comprehensive culture shift at the school: "Learning from relinquishing that fear and need to control is the only way to grow as people... If we can keep this (mutualism in the garden) for a few years and show people that you can trust us, students are not the enemy, and we need to lean into each other and support each other... We might change the university's structure." -Emma (founding garden member)

We can use Reframing across different system levels as a pair of glasses for ourselves and others. It can help us change mindsets by changing the stories we tell and choosing which stories to believe, just as it can enable us to frame challenges as opportunities for intervention.

Through this process, I also observed that initiating reciprocity is not easy for everyone, and we should not expect others to take the first step. Instead, designers can play an important role in introducing reciprocity through action and supportive tools. In doing so, designers should also show persistence when encountering barriers in systemic change-making projects. Institutions are often resistant to change, so I think social innovators should not give up easily. Or, as one of the garden member's characterized me when I was wrestling with ECU's demands for opening the garden, designers should become "tenacious."

Finally, reciprocity should not be limited to interactions within an organization; it should also expand to the ones outside. This removes another othering mindset, embeds mutualism as a value in the community, and extends it in the system. Paradigm shifts begin to occur through evolving relationships, cultures, interactions, our designs, and many more factors (Escobar, 2018). As designers, we can encourage and support people through arts, designs, and other forms of social science applications in society.

Replanting

Systemic change-making projects never entirely end, do they? Change happens through community involvement, intimate interactions, sharing stories, and ongoing conversations. Like a seasonal cycle, we started the second growing season with a new iteration of this project informed by our last year's collective learnings. I hope new students can pick up where I left off, use these learnings, design new iterations, and pass their new learnings to the next generation, and so on (Fig. 47).

This is the list of all the material I am leaving behind for them:

1. A visual identity for TRU

2. A revisable group agreement

3. A Slack channle

4. Six Planter boxes and few pots with perennials

5. A Miro board, created with garden's own Gmail account, containing collaboration tools:

   • A top view plan of the garden

   • A Stakeholder Reciprocation tool

   • An Action Plan toolset

Figure 45. The Roots Union Community Garden Diagrams-The next generations and their collective contributions help the organization form and transform.

The Garden Space

The Founding Members

Group Agreements: premise of reciprocity, mutual respect

The Design materials and tools that I introduced to the community

The participants contributions, including gardening, watering, communicating, and sharing food and harvest

The new participants who join in

The new participants' gardening work.

The new participants' collaborative design and art work

The new participants' fresh perspectives and personal interactions

Conclusion

System-level

Circular Food Innovation Lab

The Circular Food Innovation Lab (CFIL) was a project of the City of Vancouver, the Vancouver Economic Commission (VEC), Emily Carr University of Art + Design, and Vancouver-based businesses and organizations working in the food system. This project was a collaboration and co-creation with Vancouver's food businesses to find ways of intervention in Vancouver's food system that would enable a circular future. It explored ideas around avoiding, reducing, reusing/repurposing/recycling, and lastly, resorting to disposing of surplus food (refer to Vancouver zero waste 2024 initiative). CFIL used systemic design, action research, and prototyping to develop and experiment with these ideas at business locations. It aimed to transform Vancouver's food system not only to reduce waste and enable circularity but also to shift the underlying mindsets keeping the food systems stuck in a linear pattern.

As a designer and researcher of a 10 person design team, I contributed to this project by co-creating design tools and techniques, in-field research, rapid prototyping, documenting, and communicating learnings and outcomes. In this paper, I focus on examples from CFIL that help describe how patterns of individualism show up at the systemic level.

Figure 46. CFIL team at TRU

Fractals: The relationship between the small and large

In this chapter, I explore how patterns emerging at the individual scale reappeared at TRU, the community scale project. I will explain how these patterns emerged in the Circular Food Innovation Lab (CFIL), another systemic action-research project. Finding similar patterns in two different projects, CFIL and TRU, supports the argument that these patterns are visible in our larger social systems because we are interconnected. Thus, I will recall my self-reflection and show how my experiences as an individual are also recognized in more than one community-based project, TRU and CFIL, proving their existence in our systems (Fig. 49). This chapter will provide a macro-level view of the patterns enabling or disabling mutualism in our society.

| Individual Scale | Community Scale | System Scale |

Figure 47. The same pattern repeating at different scales of individuals, communities and systems

Positionality and Diversity

In the chapter "A Gift", I noted the significance of designers' positionality and diversity. Sharing positionality clarifies how designers' backgrounds, experiences, and interconnections influence their perspectives and decisions (Bradbury et al., 2019). It also plays a part in understanding the impact of personal interactions on systemic change-making projects. Finally, sharing positionality is a reflexive action that increases designers' awareness of their own biases and recognizes that personal change can have ripple effects on others and impact the wider community. Furthermore, in the same chapter, I mentioned that diverse perspectives could facilitate locating problem spaces in systemic design projects and deepen design teams' understanding of complex systemic issues. Above all, diversity is a necessity in systemic design projects to ensure an equitable future that serves everyone. In the Community-scale chapter, I explained how my positionality helped me initiate TRU projects and affected my willingness to initiate reciprocity which set the tone for the garden's future collaborations. Moreover, TRU's open door for all ECU members led to the collaboration of diverse people with very different backgrounds and roles at the university. This diversity facilitated our asynchronous collaboration since similar schedules did not restrict members. It helped us complement each other and take advantage of each individual's expertise and background. And it helped us replace the competitive mindset around the garden at ECU with a collaborative one.

In CFIL, the importance of positionality and diversity resurfaced in in multiple ways. Each individual's positionality and perspective, either from the design team or business participants, was intentionally integrated into our prototypes. For instance, when one of our older participants expressed an interest in sharing knowledge from their decades of experience with other businesses, it affected our decision to design a prototype called Peer-to-Peer. Reciprocity was present at the core of this prototype. It involved experimenting with online and in-person ways that the business participants could learn from one another's experiences, a rare type of business-to-business interaction and good example of mutualism. Moreover, each member of the group was given multiple chances throughout the project

to voice their opinions, recall their personal memories and express themselves through "I" statements.

Fear and Scarcity (at the Individual, Community and Systemic Levels)

As mentioned before, fear is one of my own limiting mindsets, and it is often the underlying reason for my self-serving decisions. My projects helped me realize that fear becomes a barrier to reciprocity in several forms. For instance, since I had an embedded scarcity mindset, I used to believe everything in our world, including achievements, is finite. This led to my competitiveness and exacerbated my anxiety. I was afraid of failing, losing time, and missing out on opportunities, as I could not see the invaluable learnings for growth behind each failure. Therefore, I found myself mostly making selfish decisions in a state of panic.

Fear and scarcity resurfaced at ECU when I realized that people had chosen competitiveness over collaboration in the garden controversy. It manifested itself in fear of losing control of the situation from the administrative perspective, fear of exploitation from the wellness center and the garden founders' view, and perhaps a fear of missing out from the angle of other parties involved in the dispute. Nowadays, provoking Fear Of Missing Out (FOMO) in customers has become a common and praised tactic for maximizing sales and profits in marketing (Conant, 2022). This is evidence of capitalism favoring competitiveness over collaboration. Reciprocity in such an environment is much more challenging to achieve.

Since competitiveness is the dominant mindset, initiating reciprocity would require defying social norms. Non-conformity, on the other hand, evokes another sense of fear, fear of becoming alienated, isolated, and marginalized. This indicates how fear can snowball and transform into several forms, hindering reciprocity.

 The same patterns were evident in the CFIL project. Business participants experienced many forms of fear, including fear of falling behind competitors and missing out on profit. This made trusting other business participants and the design team harder. Thus, collaboration

became more complicated and required fostering trust for a long period before any interventions. In doing so, our Design Lead, Lily Raphael, Learning and Systems Designer at the City of Vancouver Solutions Lab, encouraged generosity in many forms. She inspired us to share and be generous with our time, resources, and even food. I believe it was her abundance mindset that supported us in initiating reciprocal interactions as the design team, which had a ripple effect on business participants, cultivated trust, and facilitated collaboration.

Intimacy

As an individual, my intimate interactions in the TRU project played a significant role in changing the mindsets and behaviours. I have previously noted that my passion, care, and personal connections might have been the main reasons for the small change of an inclusive community garden in ECU. Intimacy and compassion among the community garden members were also noticeable. Not only it made collaboration and the garden's maintenance and management effortless, but also it enabled us to rely on each other in times of need. For instance, we felt comfortable relying on those living closer to campus to help us with watering during the weekend.

In the CFIL project, intimacy among the design team members and with the business participants resulted in building trust and forming long-lasting collaborations and friendships. We actively used techniques and tools to more deeply understand each other and the participants. In our group meetings, we opened and closed our studio sessions with prompts that required us to show vulnerability and personality. For example, we shared our hopes and dreams, challenges, favorite songs, poems, stories, and many more aspects of our personal lives. Obviously, as a design team, we had ups and downs and faced conflicts. However, the spirit of intimacy made us deal with those disagreements more smoothly and with much less tension.

Intimacy and reciprocity are intertwined; establishing a lasting reciprocal connection with someone typically generates feelings of intimacy, the more you reciprocate, the closer you feel to that person. Therefore, expressing vulnerability and sharing personal and intimate conversations are, excellent techniques for designers to cultivate reciprocity.

Reframing

In the individual chapter, Reframing was used to challenge mindsets that ignited fear and led to self-sabotaging or self-centered decisions and actions. Reframing was also employed to change the narratives over the garden controversy in The Roots Union Project to present a territorial challenge as an opportunity for collaboration. However, the Reframing concept was further emphasized in the CFIL project.

In CFIL, we developed an entire prototype solution named Reframing (Fig. 50). This prototype emerged from a well-known challenge in the food system: wasting imperfect produce. The food businesses prefer displaying only fresh and perfect produce, which itself has reinforced the customers' assumption that imperfect produce is unhealthy and not nutritious. The Reframe prototype intended to replace our assumption that imperfect looks in produce affect their nutritional value. However, Reframing came into play in other entanglements where we faced resistance. For instance, in one of the experiments, the design team faced the decision-maker's hesitence to display signage educating (Fig. 51) consumers about this issue due to corporate policies. Therefore, the designers tried to present this opportunity as a win-win reciprocal interaction by highlighting how consumers' changed consumption habits can raise the business revenue.

Furthermore, in the CFIL project, we used reframing as a technique to change the business's terminology and language about food and waste. We started to adopt "wasted food" instead of food waste to underline that waste is not a natural process in food; rather, we are the ones responsible for wasting it. Changing the noun food waste to the verb wasted food also implies how our actions have an impact on food's condition. Language significantly impacts
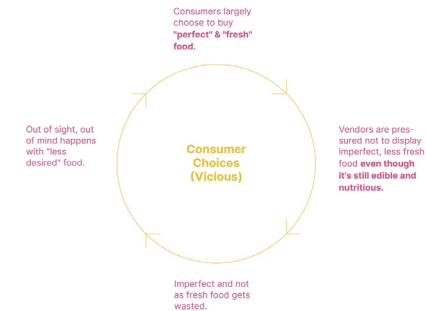

Figure 48. Reframe Prototype feedback loop

Figure 49. Reframe Prototype- Educational Signage

how we think and act, so it is crucial to pay close attention to how we communicate with participants and collaborators. I will talk about this more in the next section.

Language

I consider visual language very influential in communicating systemic and complex projects to speed up trust-building with collaborators and stakeholders. I often find myself incapable of describing my projects to others, especially non-designers. My visuals helped me communicate complex concepts to TRU community members and my peers. I imagine systemic thinking as a circular and networked form of thinking. However, we are more apt to use linear thinking (Meadows, 2009, p. 91). Our verbal communication and languages, especially in the case of English, follow a linear thinking pattern. In contrast, other languages, such as Farsi, show more non-linear and interconnected relationships. For instance, while in English, "cousin" refers to all children of uncles and aunts on both family sides, in Farsi, we acknowledge our relational connection for each one. We call our mother's sister "Khale," and our dad's sister "Ame," and relatively, their daughters are called the daughter of Khale and the daughter of Ame. The same goes for their sons or our uncles' children. Therefore, each of these people is called using a relationship in between.

Our research at CFIL showed that systemic design needs proper terminology for public communication. The business participants were often confused about the relationship between unnoticeable patterns we identified in their business and how changing them could affect the entire food system. In one of our business meetings, we used my visuals to explain the relationship between the fractal patterns and the food system as a whole (Fig. 50). We needed to expand the systemic design, visual and verbal language, and present our projects in a more comprehensible form of communication with the public and collaborators. CFIL's final

Figure 50. Lily presenting our prototypes as fractals using my system visualization in a CFIL co-creation session

report also contains multiple visuals and diagrams, including the feedback loop diagrams, to explicate systemic thinking and change-making further. We shared this report and prototyping designs with the business participants; however, this project will continue its work at the city of Vancouver's local government.

Future Studies

As mentioned, Cultivating Reciprocity proposes designing for reciprocal interactions in service design and social innovation projects. It intends to counteract the individualistic mindsets and scarcity thinking that make socioeconomic systems fragile and embed mutualism prevalent in natural systems. The previous chapter explored my research learnings by identifying five repeating fractal patterns detectable at different scales. These patterns represent the reciprocal interaction design challenges and tools that help us address them.

Also, my research provides a holistic and reflective systemic research framework for designing reciprocal interactions. This framework enables the researchers to identify complex relationships across scales in social systems. Instead of avoiding complexity, this framework embraces it by providing viewpoints at different scales for deeper learning. Consequently, it becomes easier for the designer to spot leverage points for interventions in the system. Therefore, this paper contributes to the design field in two areas: (1) a process to identify repetitive patterns that hinder reciprocity and (2) a framework for systematic design that supports mutualism, reciprocity, and interconnectedness.

This work is not anywhere near the finish line. Systemic design projects require an iterative process that responds to emergent findings. System transformation happens through repetition and decentralized iterations of similar small projects to truly shift an entire system. In other words, Cultivating Reciprocity has the potential to encourage systemic change through Scree-scaling.

Scree-scaling is "less about growing and spreading single solutions and more about legitimizing and cultivating many "small" ones. Scree refers to a mass of small interconnected stones that move in relation to one another on a slope or at the base of a hill. These small stones accumulate and together form a hill. Thus, scree-scaling represents the view that "system change is less likely to occur as a result of a few big ideas than by the accumulation of many little ones" (Tulloch, 2020). Scree-scaling supports resiliency in its proliferation of creative

approaches and collaborations and can "begin to shift cultural norms and expectations because there are a lot more agents driving new visions, rather a handful of visions being introduced and/or imposed by a few" (Tulloch, 2020). Therefore, future studies on designing reciprocal interactions are essential. With this thesis, I could only run with our torch for an infinitesimal period. The main work is still ahead of us.

Figure 51. Scree-scaling visualization of shamse

References

1. Akama, Yoko, and Yee, Joyce (2016). Seeking stronger plurality: Intimacy and integrity in designing for social innovation. In: Cumulus Hong Kong 2016, 21st - 24th November 2016, Hong Kong.

2. Alvarado Garcia, A., Maestre, J. F., Barcham, M., Iriarte, M., Wong-Villacres, M., Lemus, O. A., ... & Cerratto Pargman, T. (2021, May). Decolonial pathways: Our manifesto for a decolonizing agenda in HCI research and design. In Extended Abstracts of the 2021 CHI Conference on Human Factors in Computing Systems (pp. 1-9).

3. Ansari, A. (2019). Decolonizing design through the perspectives of cosmological others: Arguing for an ontological turn in Design Research and Practice. XRDS: Crossroads, The ACM Magazine for Students, 26(2), 16–19. https://doi.org/10.1145/3368048

4. Aragón, A. O., Warwick, R., Traeger, J., Apgar, M., Friedman, V., Hsia, H. C., Lifvergren, S., & Gray, P. (2019). What is good action research: Quality choice points with a refreshed urgency. Action Research, 17(1), 14–18. https://doi.org/10.1177/1476750319835607

5. Axworthy, M. (2019). Revolutionary Iran: A history of the Islamic Republic. Penguin Books.

6. Bradbury, H., Glenzer, K., Ku, B., Columbia, D., Kjellström, S., Aragón, A. O., Warwick, R., Traeger, J., Apgar, M., Friedman, V., Hsia, H. C., Lifvergren, S., & Gray, P. (2019). What is good action research: Quality choice points with a refreshed urgency. Action Research, 17(1), 14–18. https://doi.org/10.1177/1476750319835607

7. Brown, A. (2017). Emergent strategy. AK Press.

8. Butler, N., & Dunne, S. (2012). Duelling with dualisms: Descartes, Foucault and the history of organizational limits. Management & Organizational History, 7(1), 31-44.

9. Capra, F. (1997). The web of life: A new scientific understanding of living systems. Anchor.

10. Carter, J. G., Cavan, G., Connelly, A., Guy, S., Handley, J., & Kazmierczak, A. (2015).

Climate change and the city: Building Capacity for urban adaptation. Progress in Planning, 95, 1–66. https://doi.org/10.1016/j.progress.2013.08.001

11. Christian, C. E. (2001). Consequences of a biological invasion reveal the importance of Mutualism for plant communities. Nature, 413(6856), 635-639.

12. Cinelli, M., Morales, G. D. F., Galeazzi, A., Quattrociocchi, W., Starnini, M. (2021). The Echo Chamber Effect On Social Media. Proc. Natl. Acad. Sci. U.S.A., 9(118). https://doi.org/10.1073/pnas.2023301118

13. Clare, E. Y., Briones, E., page, K., & Angers-Trottier, P. (2019). White supremacy culture in organizations - coco. Retrieved March 3, 2023, from https://coco-net.org/wp-content/uploads/2019/11/Coco-WhiteSupCulture-ENG4.pdf

14. Conant, L. (2022, September 28). Council post: Why Fomo is the key to good marketing. Forbes. https://www.forbes.com/sites/forbescommunicationscouncil/2022/09/26/why-fomo-is-the-key-to-good-marketing/?sh=6b7eb6994057

15. Dorst, K., & Paton, B. (2011). Briefing and reframing: A situated practice. Design Studies, 32(6), 573–587. https://doi.org/10.1016/j.destud.2011.07.002

16. Ehn, P., Nilsson, E. M., & Topgaard, R. (2014). Making Futures: Marginal Notes on Innovation, design, and Democracy (p. 392). The MIT Press.

17. Escobar, A. (2018). Designs for the pluriverse: Radical interdependence, autonomy, and the making of worlds. Duke University Press.

18. Glissant, E. (1997). Poetics of relation. The University of Michigan Press.

19. Gonzalez de Freitas Morales, G. D. F., Galeazzi, A., Quattrociocchi, W., Starnini, M., & Cinelli, M. (2021). The Echo Chamber Effect On Social Media. Proc. Natl. Acad. Sci. U.S.A., 9(118). https://doi.org/10.1073/pnas.2023301118

20. Jones, P. (2020). Systemic design: Design for complex, social, and sociotechnical systems. Handbook of systems sciences, 1-25.

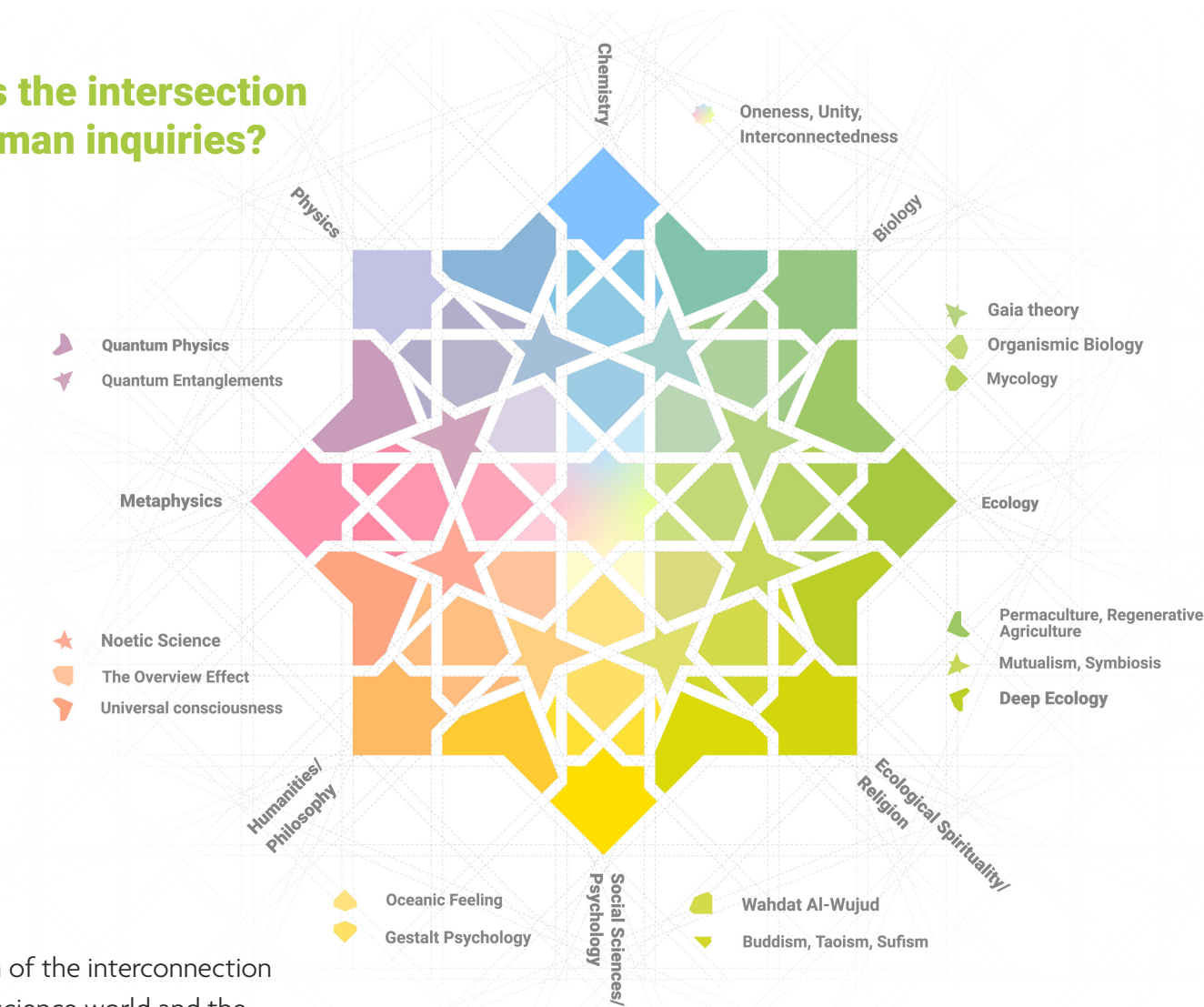21. Kimmerer, R. (2013). Braiding sweetgrass: Indigenous wisdom, scientific knowledge and the

teachings of plants. Milkweed editions.

22. Korten, D. (2022, October 28). Our planetary existential crisis. Living Economies Forum. https://davidkorten.org/our-planetary-existential-crisis/

23. Laszlo, E. (2008). Quantum shift in the global brain: How the new scientific reality can change us and our world. Simon and Schuster.

24. Manzini, E. (2013). Resilient Systems and Sustainable Qualities. In Current: Design Research Journal, Emily Carr University Press, p10-14.

25. Manzini, E. (2015). Design, when everybody designs: An introduction to design for Social Innovation. The MIT Press.

26. Meadows, Donella H. (2009). Thinking in systems: A primer. London; Sterling, VA: Earthscan.

27. McMahon, D. E., Peters, G. A., Ivers, L. C., Freeman, E. E., & Global Health Equity, D. (2020). Global resource shortages during COVID-19: Bad news for low-income countries. PLOS Neglected Tropical Diseases, 14(7), e0008412. https://doi.org/10.1371/journal.pntd.0008412

28. Moore, J. (2015). Capitalism in the Web of Life: Ecology and the Accumulation of Capital. Verso Books.

29. Nagaishi, E., & Takemoto, K. (2018). Network resilience of mutualistic ecosystems and environmental changes: An empirical study. Royal Society Open Science, 5(9), 180706. https://doi.org/10.1098/rsos.180706

30. Paton, B., & Dorst, K. (2011). Briefing and reframing: A situated practice. Design Studies, 32(6), 573–587. https://doi.org/10.1016/j.destud.2011.07.002

31. Sangiorgi, D. (2015). Designing for public sector innovation in the UK: design strategies for paradigm shifts. Foresight.

32. Shad Ghazvini, parisa, & Edraki, marjan. (2020). Analysis of the Shamseh motif by the Ibn Arabi's Thoughts and Mysticism theories. JIC, 11–1 ,(1)4. https://doi.org/10.52547/jic.4.1.1

33. Triandis, H. C., Leung, K., Villareal, M. J., & Clack, F. I. (1985). Allocentric versus idiocentric

tendencies: Convergent and discriminant validation. Journal of Research in Personality, 19(4), 395–415. https://doi.org/10.1016/0092-6566(85)90008-x

34. Tulloch, G. (2020, May 22). Problematizing scale in the Social Sector (1): Expanding conceptions. InWithForward. https://www.inwithforward.com/2018/01/expanding-conceptions-scale-within-social-sector/

35. Wang, L., & Murnighan, J. K. (2011). On greed. Academy of Management Annals, 5(1), 279–316. https://doi.org/10.5465/19416520.2011.588822

36. Wolchover, N., & Quanta Magazine (2020, July 31). How the Universe got its bounce back. Quanta Magazine. Retrieved February 16, 2023, from https://www.quantamagazine.org/big-bounce-models-reignite-big-bang-debate-20180131/

Appendix

Where is the intersection of all human inquiries?

Chemistry

Oneness, Unity, Interconnectedness

Physics

Biology

Quantum Physics
Quantum Entanglements

Gaia theory
Organismic Biology
Mycology

Metaphysics

Ecology

Noetic Science
The Overview Effect
Universal consciousness

Permaculture, Regenerative Agriculture
Mutualism, Symbiosis
Deep Ecology

Humanities/ Philosophy

Ecological Spirituality/ Religion

Social Sciences/ Psychology

Oceanic Feeling
Gestalt Psychology

Wahdat Al-Wujud
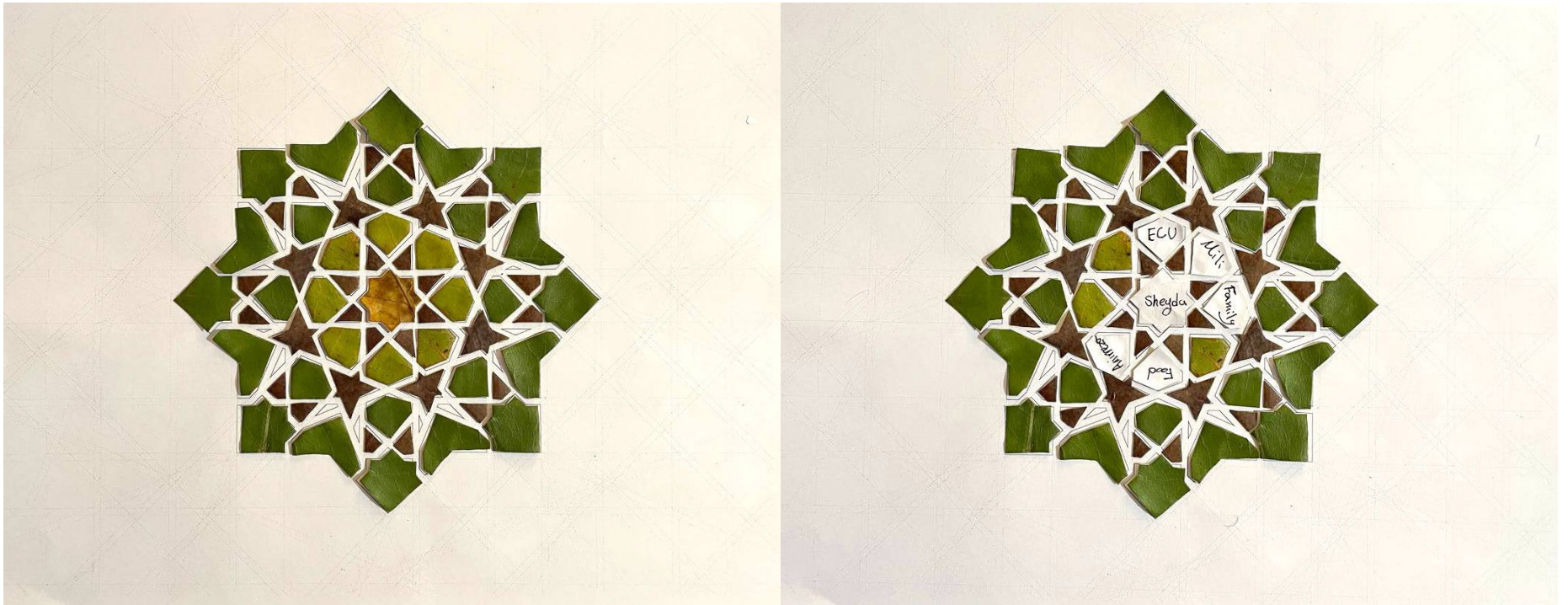Buddism, Taoism, Sufism

A A visualization of the interconnection between the science world and the humanities world.

My Space of Inquiry Within This World

This diagram portrays my space of inquiry. The opacity of the spaces that are not related to my direction is lowered to specify the theories that I will investigate further, specifically in my readings during the summer semester. The lower the opacity of the fractions, the lesser chance that I will be able to find any material that would benefit my thesis and design projects.

Legend:
- Oneness, unity, coherence
- Interconnectedness
- Social Innovation
- Permaculture, Regenerative Agriculture
- Decolonial Thinking
- Food
- Biomimicry
- Mycology
- Soliphilia
- Mutualism, Symbiosis
- Restorative Justice
- Maya civilization
- Monism
- Reciprocity
- Buddism, Taoism, Sufism
- Indigenous Studies
- Reincarnation, Transmigration, Metempsychosis
- Oceanic Feeling
- Synesthesia
- The Overview Effect
- Metaphysics
- Universal consciousness
- Quantum Entanglements
- Distributed systems

Axis labels: Systems Thinking, Systemic Design, Computer Science, Ecology, Quantum Physics, Ecological Spirituality and Religion, Noetic Science, Psychology

B A visualization of my preliminary space of inquiry in the first year of the Master's program.

C A studio project in which I used self-exploration and reflection to learn about my own interconnections. Made with fallen leaves. The first project that inspired me to use the Shamseh visual for diagraming.

I joined the Roots Union community garden because.....

[handwritten text, illegible]

I wish the community garden would offer activities or services such as......

[handwritten text, illegible]

In the future, I wish to see the community garden members would be inspired by it to.....

[handwritten text, illegible]

In the future, I want to see the community garden change Emily carr university's culture/environment by.....

[handwritten text, illegible]

When talking about the Roots Union community garden, I hope non-members would regard it as....

[handwritten text, illegible]

I hope the community wouldn't garden to become....

[handwritten text, illegible]

D   A quick ice breaker activity for TRU collaborative sessions participants. Using a language that prompts self-reflection.