Designing Futures with Care

Finding Our Way to Different Worlds Together

BY TARA CAMPBELL & ARIANA LUTTERMAN

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By Ariana Lutterman & Tara Campbell

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requirements for the degree of
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Tara Campbell & Ariana Lutterman

Abstract

Current converging social, economic, and environmental crises offer an opportunity for a "great transition." Transition is the project of intentionally directing change toward desired futures. While designing for transition has been explored in theory, the question of how one incorporates the ongoing, complex, and values-based nature of transition into design practices remains largely unaddressed. This research explores how we might orient our own design practice around transition. We establish principles-based designing as a process for intentionally, effectively, and critically working toward a desired future. We demonstrate and evaluate this process during a design engagement for a sustainability-oriented innovation centre in the Northwest Territories. We find that effectively using principles-based designing for transition requires using principles as more than static guidelines. We reframe principles-based design as a way to encourage ongoing critical reflection of one's design practice and its role in shaping emerging futures.

KEYWORDS
Transition design; reflective practice; principles-based design; collaboration

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Our friends and families—

Our families, for getting us to where we are and being there for the long haul.

Our friends, for making our lives outside of this project so lovely.

James, for the fine-grain sandpaper edits and so much more.

Everyone in the Strategic Foresight and Innovation program, with us, before us, and after us, who inspired us to think critically about the ways we design.

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The non-humans—

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This project was researched and written on Aboriginal lands, the traditional territory of many nations including the Mississaugas of the Credit, the Anishnabeg, the Chippewa, the Haudenosaunee, and the Wendat. We were also fortunate enough to conduct primary research in the traditional territory of the Yellowknives Dene First Nation. We have been honoured to learn from and listen to Indigenous communities, the ultimate experts in sustainable and relational ways of life, who have been caring about futures since long before us.

To each other.

"I am reaching toward a space I will create with you."

—Erin Manning, *The Politics of Touch*

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Preface

Hello! We are Tara and Ariana, two emerging transitionistas working toward a different world through design. This document is our Major Research Project for OCAD University's Master of Design in Strategic Foresight and Innovation. It is also an attempt to share an ongoing conversation we have been having with each other about the futures we want, how we might do our part to transition towards them, and the kind of designers we would like to be. We are grateful that we have had the opportunity to do what is not often allowed as graduate students: to conduct our formative research project in partnership. For us, the ability to work collaboratively has allowed us to create something much greater than what either of us could have produced on our own. It has also allowed us to uphold values more closely aligned with the world we want to transition toward: a world that appreciates the relational, collaborative, plural, and ongoing. We have tried to think with and do research with these commitments in mind.

Tara   Ariana

The topic we began our research with, the idea of designing for transitions to a different world, was an area of interest we both began cultivating independently before we met each other. When we did meet at OCAD, our first conversation involved a discussion of transitions to fundamentally different ways of living. Both of us had decided to pursue a degree in design because of a preoccupation with the idea that design might play an important role in these kinds of transitions. Our coursework never explicitly touched on transition, but we began an ongoing conversation about it with each other, sharing things we had learned and read, what we wondered about and disagreed with, and what we found inspiring. During a year of working on projects for our degree, sometimes apart but often together, we found that what we produced in collaboration took us to greater places than any work produced on our own. We took this Major Research Project as an opportunity to finally explore designing for transitions together.

This research project was an exploration and an experiment. It gave us an opportunity to dedicate the majority of our time and attention to something we truly cared about for the express purpose of developing ourselves as humans, researchers, students, collaborators, designers, and thinkers. The project and the way we see ourselves in all these positions have evolved constantly over this past year. When we look back at the beginning of this process, our research questions look quite different, and yet, our main interests have remained the same.

Ultimately, this project took us much further than we had imagined. Not only were we able to systematically explore a line of inquiry, but throughout the course of this work, we also experienced our first significant transition-oriented design project. We took the theoretical ideas from our discussions and tested them and our partnership in practice, creating tangible results to evaluate and learn from.

So what is this Major Research Project about? For us, it has been about much more than the aims and research question we articulate in the upcoming introduction. For us, it has been about imagining futures we want. It has been about coming to terms with the present. It has been about deeply listening, but also about finding our voices. It has been about exploring radical collaboration and our own ways of designing, ways suited for a world we are working to help build.

It still feels like there is so much work to be done, so much that is underdeveloped or unfinished, so much we still do not understand, so many things we planned on doing that remain unfulfilled. But we have to remember that this is just us putting our toes in the water, exploring the very beginnings of a collaborative partnership and our designerly ways of being in the world.

If you are reading this, it must be the future, and our ideas will likely have evolved. We would love to explore them with you. Reach out![1] We'll be there.

— Ariana & Tara

PS: A NOTE ON OUR CHAPTER ILLUSTRATIONS
In line with the spirit of collaboration, we took a collaborative approach to the design of this document. Each chapter title page has been illustrated by our friends and family. In response to a short prompt, they produced a visual interpretation of their assigned chapter. This experiment allowed us to honour the many voices who have been involved in our work, and it gave us an opportunity to express our ideas through another medium; sometimes art can communicate better than words.

1. To the tune of *Four Tops* 'Reach Out'!

0.

Introduction

People often begin discussions about the future by speaking of crisis, and for good reason; there are large-scale changes on the horizon. The planet is facing the current and projected impacts of anthropogenic climate change: rising global temperatures, melting ice, extreme weather events, a vast increase in environmental refugees, an exponential rise in species extinctions, etc. These are inseparable from economic growth, corporate power, immense wealth inequality, structural oppression, and political upheaval. Being immersed in these narratives, it is easy to be overwhelmed, cynical, and fearful about the future, to feel anxious, panicked and paralyzed to the point of inaction.

And so, even though we too have already started by talking about crisis, we want to truly begin our discussion somewhere else: by talking about possible futures in a way that might enable us and our readers to act toward creating alternatives. If we plan to sustain ourselves in the long work of enabling transitions toward a world we want, we choose to think about these crises as matters of urgency instead of emergency.[2] Other ways of living are possible, but dwelling on the idea of apocalypse is not productive. A narrative focused on "it's-too-late" encourages giving up rather than taking action.

In the midst of all of these entangled systemic crises, there are people working to direct and shape the forces of change around us.

These people might be part of social and ecological justice movements, crafting policies to incentivize renewable energy, experimenting with alternative economies, demanding transparency from corporations, or relocalizing agricultural systems. These sorts of initiatives are all intentional actions toward a different future. Together, they could bring about larger change, a kind of transition.

2. Donna Haraway (2016) calls for considering and acting on current crises with an attitude of urgency instead of emergency. As we interpret this idea, urgency is an understanding that action does need to be taken immediately, that particular responses and work are needed right now, even if these actions will take decades or even centuries to produce results. Yet urgency is different in tone from emergency. Rather than motivating by panic or desperation as emergency does, urgency motivates by importance.

We need to carefu the ways in which futures.

No matter what, the future is going to be different from the present. Transition is about the attempt to direct what this difference might look like: different ways of living, different social practices, different economies, different politics, different cultures. Different futures require intentional, collective action to shape uncertainty and direct the prevalent forces of change.

Different futures require transitioning together, where we humans claim and actualize the power to change the ways we live on our shared planet.

Enacting change is the focus of many people, organizations, businesses, and professions. The practice of design is ultimately about introducing changes to the world, and, as designers, we have our own perspectives on how change happens. Everything, whether material object, service, or interaction, is a product of design in some way. These "things", in part, come to shape possibilities, to prescribe ways of living, and even to define what it means to be human. Design is also one primary practice through which people attempt to intervene in the processes of world-making.

ully examine
a design creates

The design world is beginning to recognize that transitions can be intentionally shaped and directed.

Designing for transitions, however, might mean something quite different than how design has been traditionally practiced. As an emerging area of thought, design practices oriented around transition are still in the early phases of exploration.

We hope to contribute to this exploration and reflect on the way transition designers think about different futures and their practices within it. Our design interests coincide with much of the work labeled as transition design, systemic design, or social innovation design. As designers, we are aligned with these approaches and have learned from their theoretical foundations. Yet, we also find these fields difficult to engage with on a practical level. What does it mean to practice transition design or to transform your design practice to align with the objectives of transition? Our research sits broadly within this family of questions; we seek to build more pragmatic foundations for what have so far been largely academic and theoretical design notions.

We need to carefully examine the ways in which design creates futures because the future matters, not only for us but for future generations and all life on Earth.

What we set out to do

In undertaking this research, we wanted to reflect on how designers might work toward transition in practice. We sought to develop and explore concepts that we could apply and carry forward with us in our personal and collaborative design practices.

Arriving at a Research Question

We began our research process with a series of generative questions:

- How might we engage people from multiple perspectives to collectively imagine desirable futures?

- How might we motivate people to work toward an alternative future that may be ambiguous and loosely defined?

- How might those engaging in transition manage key tensions around living and participating within a current societal paradigm while working to enact a new one?

As our research unfolded, we often found that we could not actually provide answers to these questions and that, in some cases, these were not the questions driving our thinking. Recognizing that we were guided by different research questions at different points, it is perhaps useful to ask ourselves, retrospectively: how do we put these questions together? What is the overarching question this research has answered?

Fundamentally, our research was grounded by our interest in connections between design theory and design practice, and in helping ourselves and other designers better understand how to design for transitions. In our emergent research process, we found ourselves organizing around a few assumptions, or premises, upon which we built our path of inquiry. ▸

PREMISES

1. Transition is a continuous process of moving between a world we know and a world we cannot know.

2. Working to direct change shapes the possibilities of an uncertain future.

3. Designing for transition is one way of shaping those possibilities.

4. Because transition has unique qualities, designing for it requires a unique way of practicing design.

With these premises in mind, we found ourselves orienting our thinking around a set of principles that could be used to direct our design practice.

RESEARCH QUESTION

How might the unique qualities of transition be translated into principles that orient design practices toward desirable futures?

Methodology

This major research project recounts a journey into our collaborative reflections as emerging designers. Our first-person design research takes the form of reflective practice, or critical practice-based design research, that inquires into the ways we go about acting on the world as designers.

Figure 1: Research phases

We began our research with transition-related literature to review what 'transition' means, how it happens, and how design could be involved.

BACKGROUND RESEARCH

We discussed and synthesized an idea of the future we want.

1
UNDERSTAND DESIGNING FOR TRANSITIONS

2
EXPLORE AN ALTERNATIVE FUTURE

3
DEVELOP PRINCIPLES FOR TRANSITION DESIGNING

We used our literature review, design experiences, and theoretical reflections to develop principles for designing the transition we want.

REFLECTIVE PRACTICE

5
REFLECT AND EVALUATE

4
TEST

Finally, we observed and reflected on the efficacy of using principles-based design for transition.

In a case study, we examined our principles in practice through a design consulting project for an environmental organization in the Northwest Territories.

Figure 2: Research phase breakdown

PHASE	ASSUMPTIONS	QUESTIONS	METHODS
Understand designing for transitions	• Change is necessary, and transition is the way to achieve the type of change we believe is required. • Design can be useful for working toward transition.	• What is transition? • What are the unique qualities of transition? • How is design involved in facilitating transitions?	• Literature review
Explore an alternative future	• Current ways of living cannot be sustained. A business-as-usual trajectory is the wrong approach for our collective futures. • Uncovering the type of world we want to work toward can help us understand our own values that inform our ways of practicing.	• What kind of world do we want to transition to?	• Literature review
Develop principles for transition designing	• Because transition has unique qualities, designing for it requires similarly unique ways of practicing. • Developing principles for designing with these unique qualities in mind can guide design practices in a way that makes them more effective for working toward transition.	• How can principles for design practices take into account the unique qualities of transition? • How can principles for design practices take into account the values of our desirable future?	• Principle development informed by GUIDE (Patton, 2017)
Test	• We can apply our own principles in a design process to demonstrate how design can be practiced in a critical, reflective, principles-based way.	• How can we orient our own design process around our principles?	• Principles-based design
Reflect and evaluate	• Reflections on our own principles-based design process might help us understand how we can more effectively work toward transition as designers.	• What was it like to design according to our principles? • What can principles-based designing offer for transition?	• Principles-focused evaluation

Research attitudes

The way we do research matters

Research not only describes realities but also actively creates them (Law, 2004). As researchers working toward a different world, it is important to try to produce knowledge in a way aligned with the world we are trying to build. With this in mind, our research has been conducted with two foundational attitudes: collaboration and care.

Collaboration

Collaboration was at the heart of our research, emerging from the notion that we cannot and do not want to think alone. Thinking and knowledge-making do not occur in a vacuum but emerge through interaction with others' thinking and knowledge-making practices. Though this is a part of all research, it is not always explicitly recognized and fostered. We began to think about what this could look like in our own research when inspired by Maria Puig de la Bellacasa's (2012) relational practice of *thinking with care*:

> **"I want to value a style of connected thinking and writing that troubles the predictable academic isolation of consecrated authors by gathering and explicitly valorizing the collective webs one thinks with, rather than using the thinking of others as a mere 'background' against which to foreground one's own."**

This notion of thinking with care was part of our decision to conduct our research as an official partnership. This has allowed us to employ a more dynamic form of collaborative thinking where we think in conversations, in dialogue with each other. Every part of this research has been thought through, talked through, and written by us as two researchers in dialogue with the thoughts and opinions of those we have been reading.

Care

Thinking with care for us has also meant carefully examining and reflecting upon our design practice. Tronto (1993) outlines four elements of care: *attentiveness, responsibility, competence*, and *responsiveness*. These elements have helped us to describe what it means to practice design with care. Designing with care means paying

attention to and being responsible for "the relationality between what we design and the impact that it has on all life-forms and systems," and being responsive context (Vaughan, 2019). It means developing the competence to "allow [us] to attend to the fragile attachments among the human and nonhuman others for whom [we] design" (Imrie & Kullman, 2016). Caring about our design practice means not only caring about *what* we design, but *how* we design. These notions around care were woven into our research and will resurface more prominently later in our work.

Structure

This document has three parts. Part I, *Thoughts to think with*, presents an overview of our background concepts. In the first chapter, we describe what transition means to us and how to understand it in the context of our research. In the second chapter, we delve into design and the role it can play in bringing about transition. Part II, *Designing for principles*, outlines our experience with principles-based designing for transition. In chapter three, we go over our research methodology. In chapter four, we describe the transition we are interested in facilitating and the principles we developed to guide our design engagements. In chapter five, we describe a case study in which we used our principles in practice. In Part III, *Reflecting*, we collect our thoughts about our work and summarize our findings. In chapter six, we reflect on principles-based designing and discuss implications of our findings for designers and for transition. In chapter seven, we conclude by summarizing our research contribution and discuss its limitations as well as future work.

A NOTE ON 'WE'
Going forward, we have attempted to use 'we' and any other first-person plural pronouns in this document solely in reference to us, Tara and Ariana, unless otherwise specified.
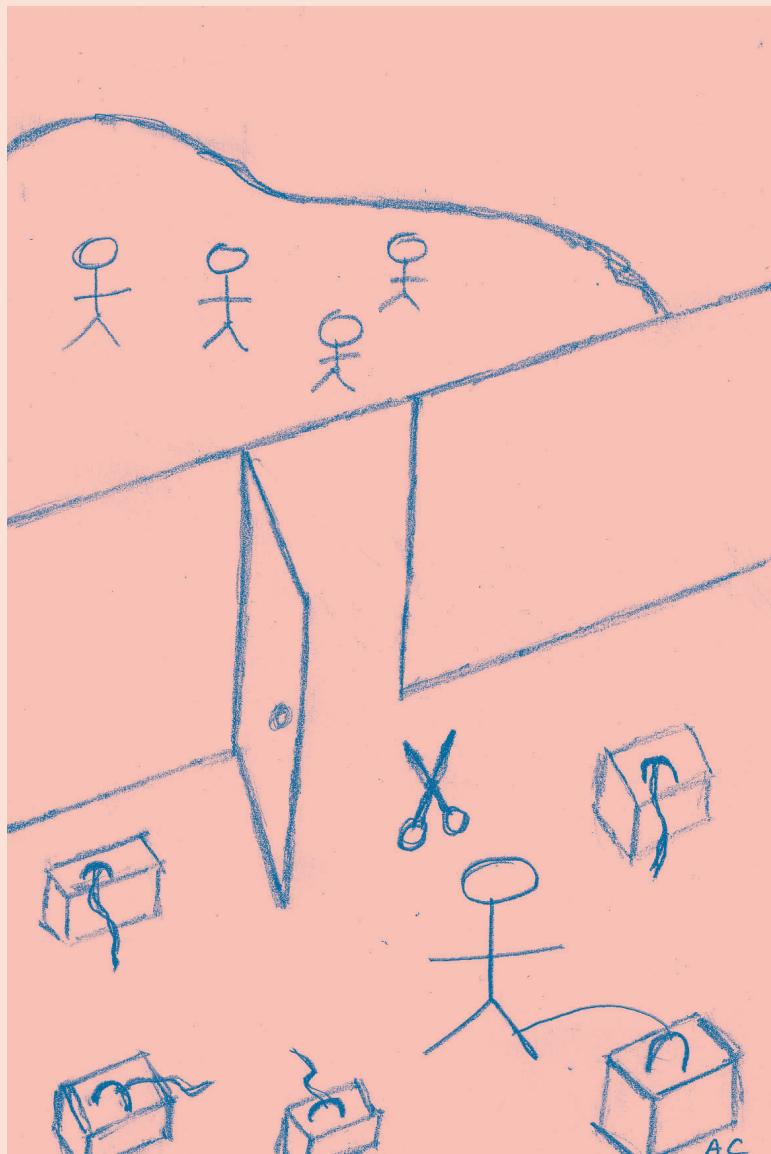
Thoughts
think wit

s to
th

1.

Transition

Human societies are always changing, moving toward uncertain futures. Yet for all of us, there are some futures that are more desirable than others. Understanding the futures we want can help orient the ways we live and work in the present toward the creation of these futures. Transition is the word we use to describe this deliberate action to direct change toward a desired future.

Defining transition

Transitions in hindsight

Societies have historically undergone many periods of far-reaching, structural change. These transitions have fundamentally altered the ways groups of people act and live in the world.

Transitions described in hindsight are used to create cohesive narratives from changes at different scales over long periods of time. While they are often described as if they were expressions of or caused by some singular event, they are better seen as the complex articulation of many different forces and struggles.

Transitions for the future

Though transition can be thought about retrospectively, in our research we use transition as a way to think about the future. The transitions we are discussing are *intentional*, driven by visions of desired futures and the implications those visions have for actions in the present.

TRANSITION:

the intentional process of orienting change toward a desired future

Transition today

The feeling that a particular historical moment is on the precipice of especially calamitous or promising change is not a unique one. Stories of disaster and doom have always been found in places around the world. To use some examples from the Global North: the Black Death; anticipation of global nuclear war; Y2K's impending disaster. There have also been historical moments of promise, optimism, and opportunity: the Renaissance and the Enlightenment's faith in human 'progress'; the promise of capitalist, democratic, urban modernity; the swell of grassroots social and political movements in the 1960's. These stories tend to position change as a cohesive narrative of cause and effect.

The present moment

There is also a strong temptation to feel that there is something about the current moment that is unique, unlike any moment before. The changes being experienced globally do feel especially expansive, touching almost every domain. Humanity is facing anthropogenic climate change with urgent and dramatic implications, reactionary political leadership is rising in countries around the world, wealth inequality is expanding, and there is an unprecedented acceleration and dispersion of technological development. Perhaps it is the very extensiveness and entanglement of all of these changes that makes the story of change at this moment in history unique.

Maybe more than anything, the present moment is defined not by a singular crisis, but by the convergence of many changes.

For example, the present moment might be defined not just by a crisis like climate change, but by the interaction of climate change with social unrest and migration, with reactionary political decisions, with technological infrastructure that allows news to have global reach and response. Perhaps this moment is best described as a story of change feeding change more visibly than ever before.

A new context

It is possible that the convergence, pervasiveness, and visibility of change being experienced right now is new. But, what is certainly new is the human capacity to see and understand the connected, global, and systemic nature of change better than at any point in history. There is a greater ability than ever to see how projects and issues everywhere are connected and shared, to source feedback in rich and meaningful ways, and to put forward possible forecasts and models of what our future might look like. And yet, at the same time, there is also greater transparency and criticism of this new information. This has led to a growing number of passionate attacks on various forms of and claims to knowledge and the authority on which they are offered. We need to situate our understanding of transition within this new context.

Within the complexity, entanglement, and change of the current moment, how do we describe what is actually in transition?

Worlds in transition

When we discuss transition in this research, we borrow from anthropologist and design scholar Arturo Escobar's use of the term to describe an ambition to "transition to an altogether different world" (2018b, p. 66). What do we mean by "world"?
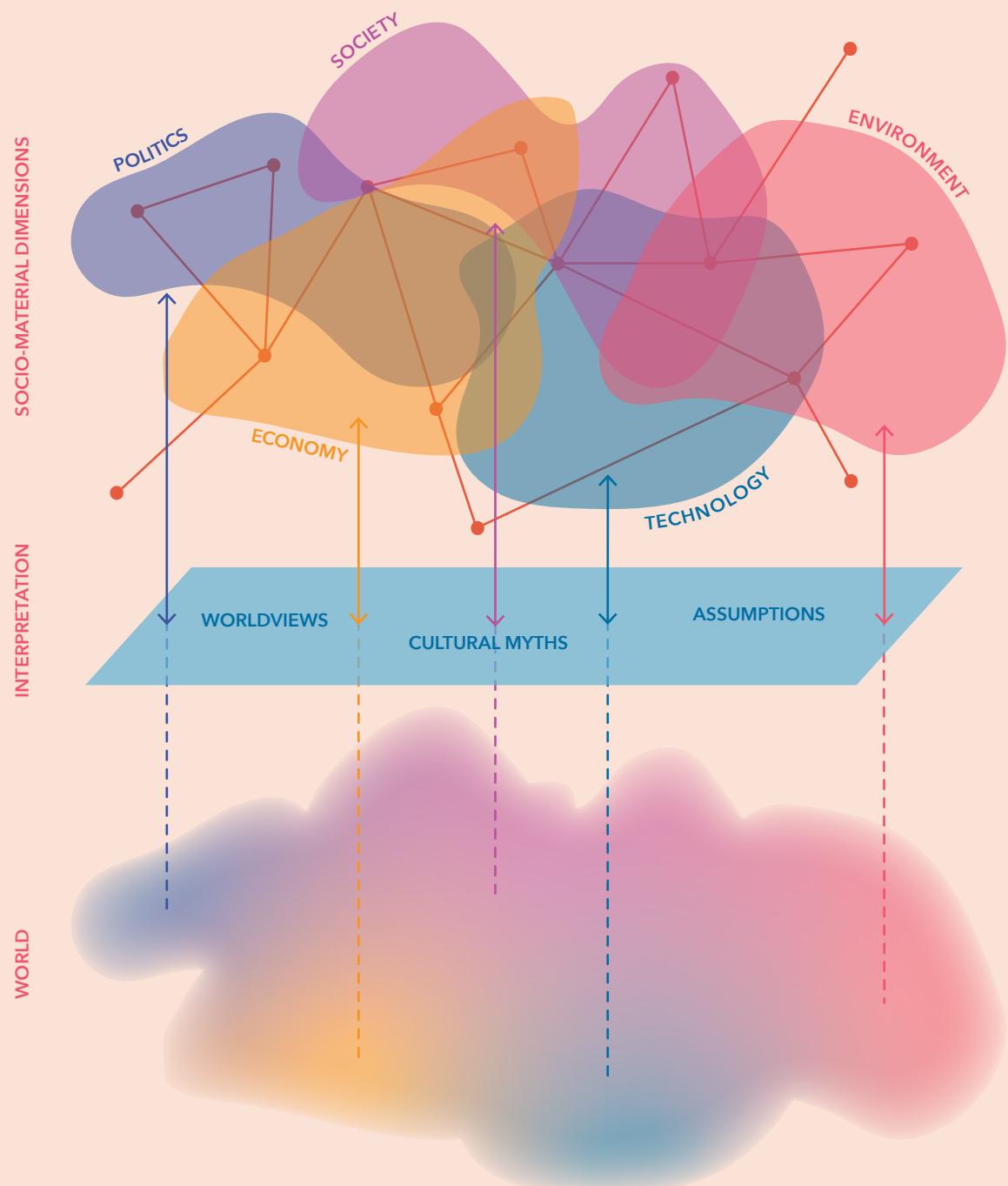
Worlds are layered.

When we use the word "world," we do not mean it in a planetary sense. We are not referring to the Earth, this planet we all share. Worlds are the realities we humans understand and experience, and these realities are "articulated along different dimensions" (Poli, 2011). Any attempt at describing a person's world must be layered and complex; the socio-material dimensions—economies, politics, society, environment, technologies—come to influence the ways a person experiences and understands these realities in everyday life.

The often implicit stories, assumptions, and cultural myths that underpin ways of living shape a person's understanding of their world (Blaser, 2010). Not only do these filter how socio-material dimensions are experienced, but they also shape these dimensions, just as these dimensions shape and inform the interpretations of them.

Figure 3: A world
The socio-material dimensions of our worlds are interpreted through the ways humans understand and make sense of them. These interpretations informed by socio-material dimensions in turn influence the things within these dimensions. Worlds are composed of this interaction between socio-material dimensions and the way human interpretation filters and changes them. A world is the experience of this interaction.

SOCIETY

POLITICS

ENVIRONMENT

SOCIO-MATERIAL DIMENSIONS

ECONOMY

TECHNOLOGY

INTERPRETATION

WORLDVIEWS

CULTURAL MYTHS

ASSUMPTIONS
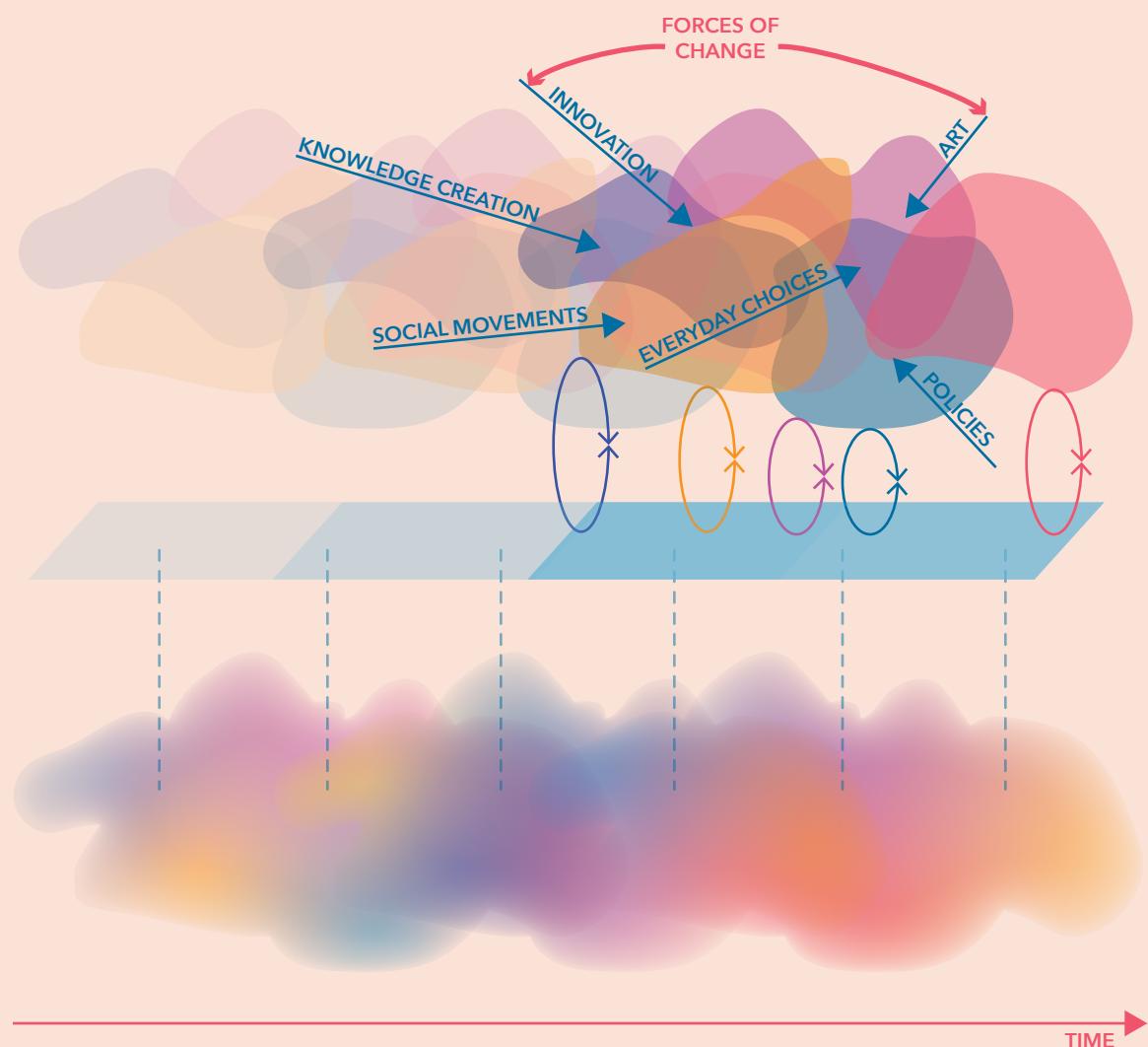
WORLD

Worlds are changing.

The dimensions that make up a world are constantly evolving, and the interpretations and ways these dimensions are experienced are always changing as well. These things are not separate but entangled; changing the dimensions of a world will change the ways the world is interpreted just as changing the narratives or assumptions about the world will change how humans act within a world's socio-material dimensions.

Figure 4: A changing world
The socio-material dimensions and interpretations of our worlds are always changing over time as different forces of change act upon them. The ongoing interaction between these layers contributes to these changes. As change occurs in the socio-material dimensions and the interpretations of them, worlds similarly change and evolve.
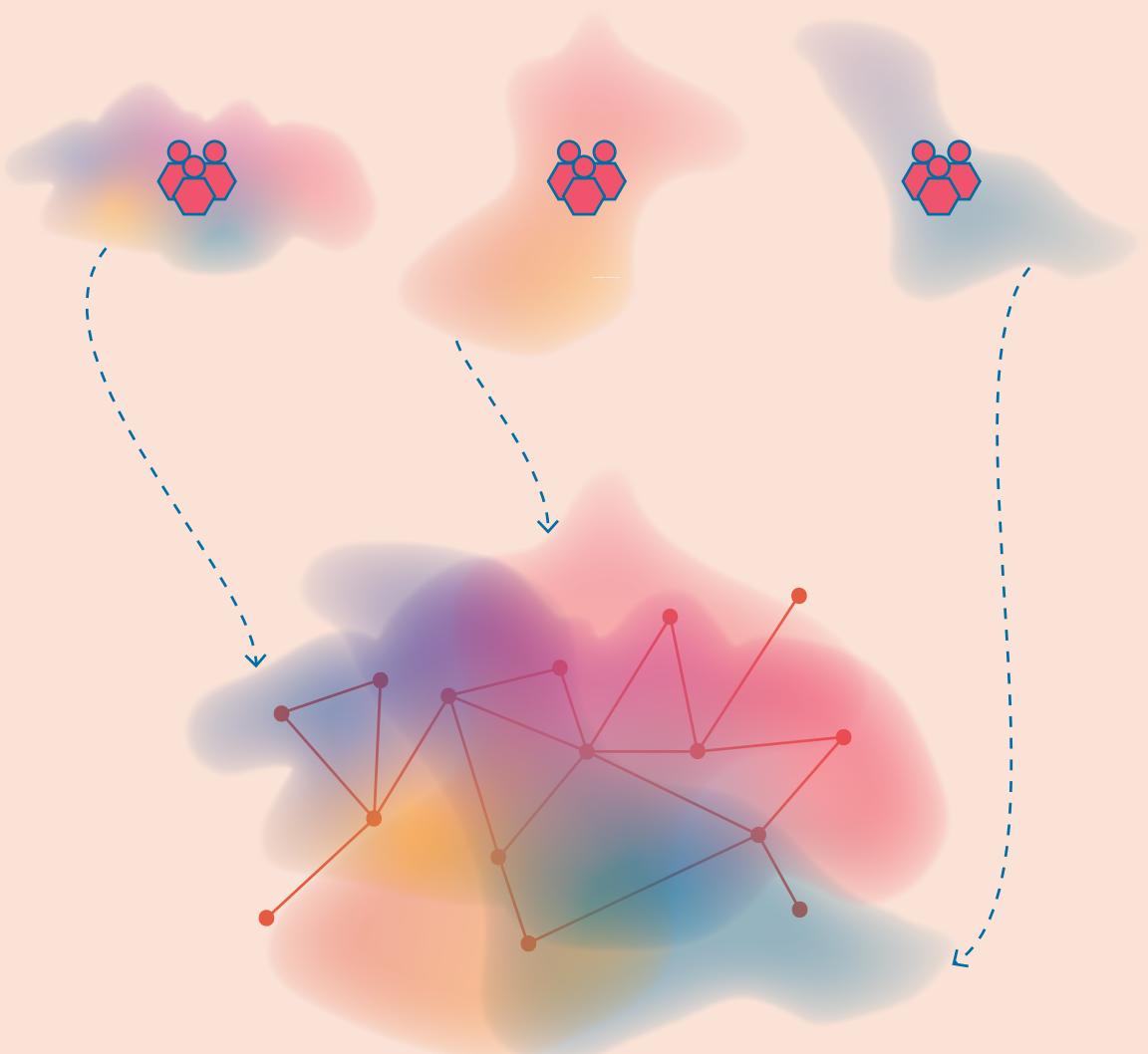
Worlds are social and plural.

A world may be shared by people who share a culture, community, or way of life. The dimensions that come to shape a world—social, political, environmental, etc.—may be shared, but people may still have different experiences, understandings, and interpretations of these shared realities; they inhabit different worlds.

Figure 5: Plural worlds
Both the socio-material dimensions and interpretations that make up a world may be shared among many people or even whole countries or cultures. Yet people may inhabit different worlds and have different experiences of the same socio-material dimensions if their ways of interpreting these dimensions are different.

Transition actors
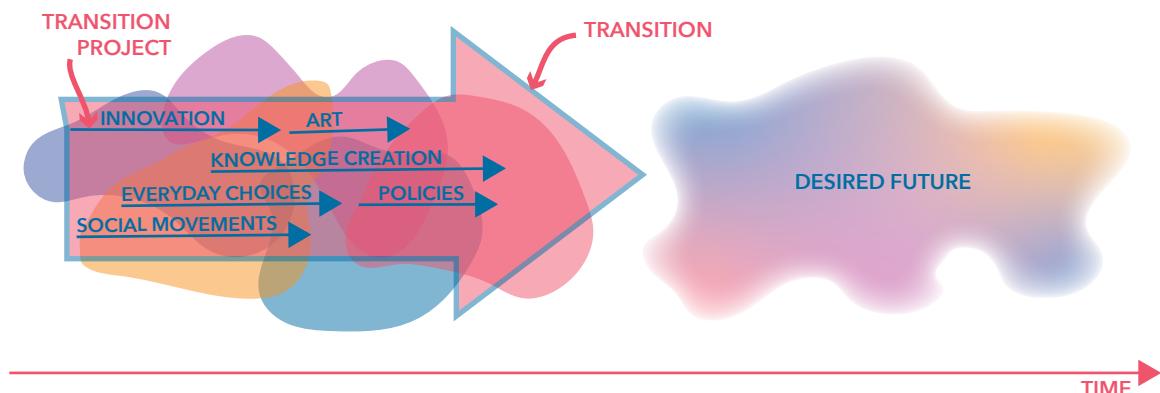
Transition is distributed, emergent, and not necessarily organized. It is composed of a network of actors working to create change in many different domains, at different scales, and over different lengths of time. This network is not centrally organized but composed of distributed actions, initiatives, and interventions. Those within this network may have quite different ideas of what a desired future might look like and quite varied visions of how to work toward this future. While their visions might be different, the overlap between them creates a transition movement out of these many actors and projects. These distributed initiatives are what we refer to as transition projects.

A transition project

A transition project is how we define work oriented toward creating a desired future. Some transition projects are explicitly aware of and defined by this orientation; they characterize their work through the desire to create a different world. Many projects working toward transition, however, do not necessarily situate themselves within a larger narrative. Their work may be quite domain-specific or oriented toward a goal other than that of creating a different world. Yet, whether acknowledged or not, the work of all transition projects contributes to the design of a different world when seen in conjunction with other projects working toward a similar desired future.

Figure 6: Worlds in transition
Transition projects are ways of intentionally orienting the forces of change that act upon the socio-material dimensions of our worlds toward a desired future. These projects contribute to the ways our worlds evolve over time. Transition emerges from the way many different forces oriented toward a similar desired future together shape worlds.

Spectrum of transition projects

Transition and the projects oriented toward it can take on many forms.

Where does it happen?
People working toward transition might be involved in individual projects, in organizations, in communities, or in governments.

What is involved?
They may be working in one particular domain on a particular project that makes a desired future slightly more possible. Or they may be working more holistically, facilitating how many different people, projects, and initiatives come together to produce large-scale change.

What is the scale?
They may be working quite locally or at a global scale. Different social framings might be involved; they could be working at a personal level, within a neighbourhood, a city, a nation, or beyond.

What is the time horizon?
They may be working on change that is immediate or on projects with effects that might only be felt beyond their lifetime.

How specific is it?
They may have a concrete vision of a desired future, or they may be working only from a sense of what they would like to move away from.

The unique qualities of transition

We understand three main qualities that together define transition:

- ## Complex

  Transition is a large-scale, multi-level movement consisting of many projects and many people working together over long periods of time. It involves not only surface level, immediate changes but changes to social practices and underlying cultural assumptions. Working toward a desired future happens in socially diffuse ways. This makes transition complex in that those participating in transition are not necessarily coordinated, organized, or aware of each other. Though socially diffuse and with quite different strategies for change, actors and projects whose work is oriented toward a shared vision of a desired future together form a transition movement.

- ## Ongoing
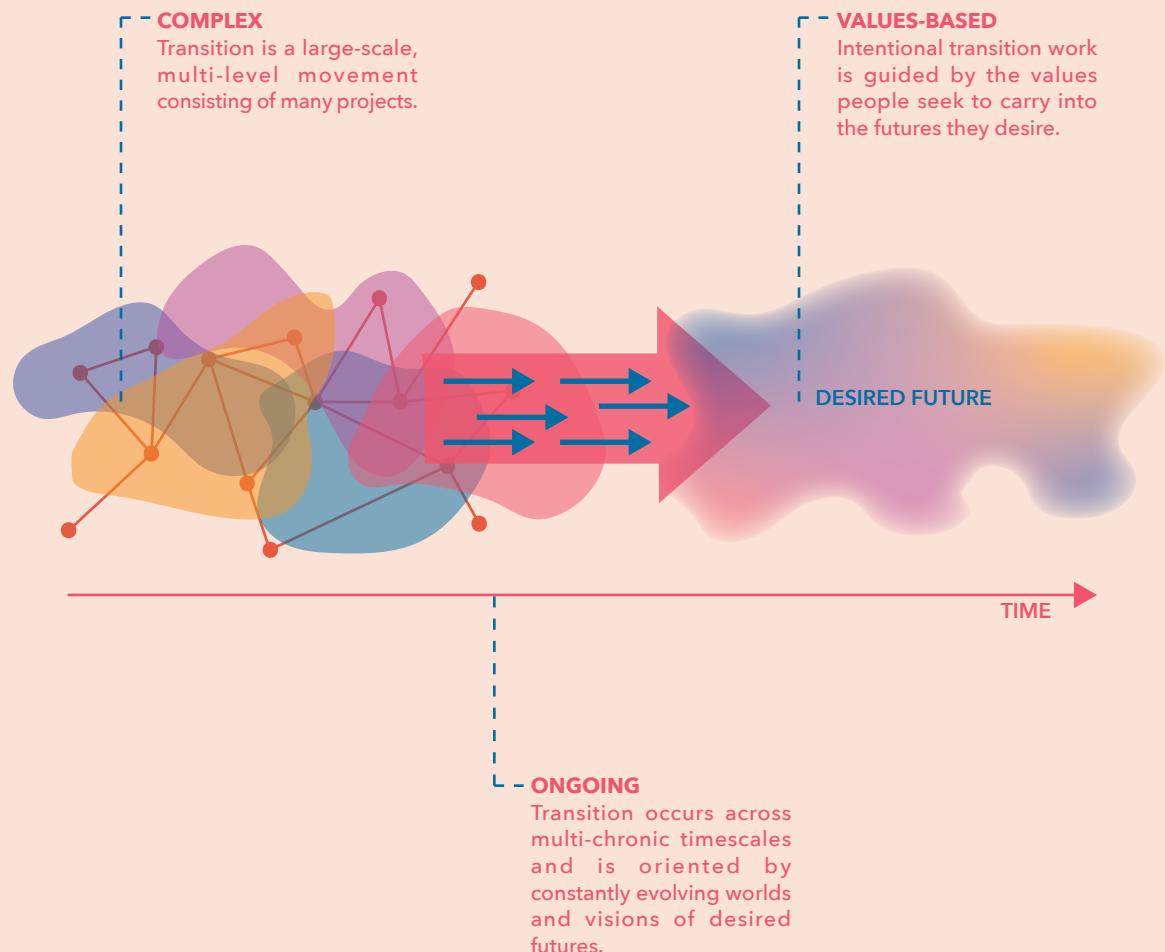
  Creating a different world is, in many ways, an aspirational project. It is likely that most people working toward transition will not live to see the world they hope to create; to work toward transition is to work toward a long-term future. Rather than focusing on an end goal that is sure to change, transition by definition is about the ongoing process of directing change in a particular way. Transition occurs across multi-chronic timescales and is oriented by constantly evolving worlds and visions of desired futures.

- ## Values-based
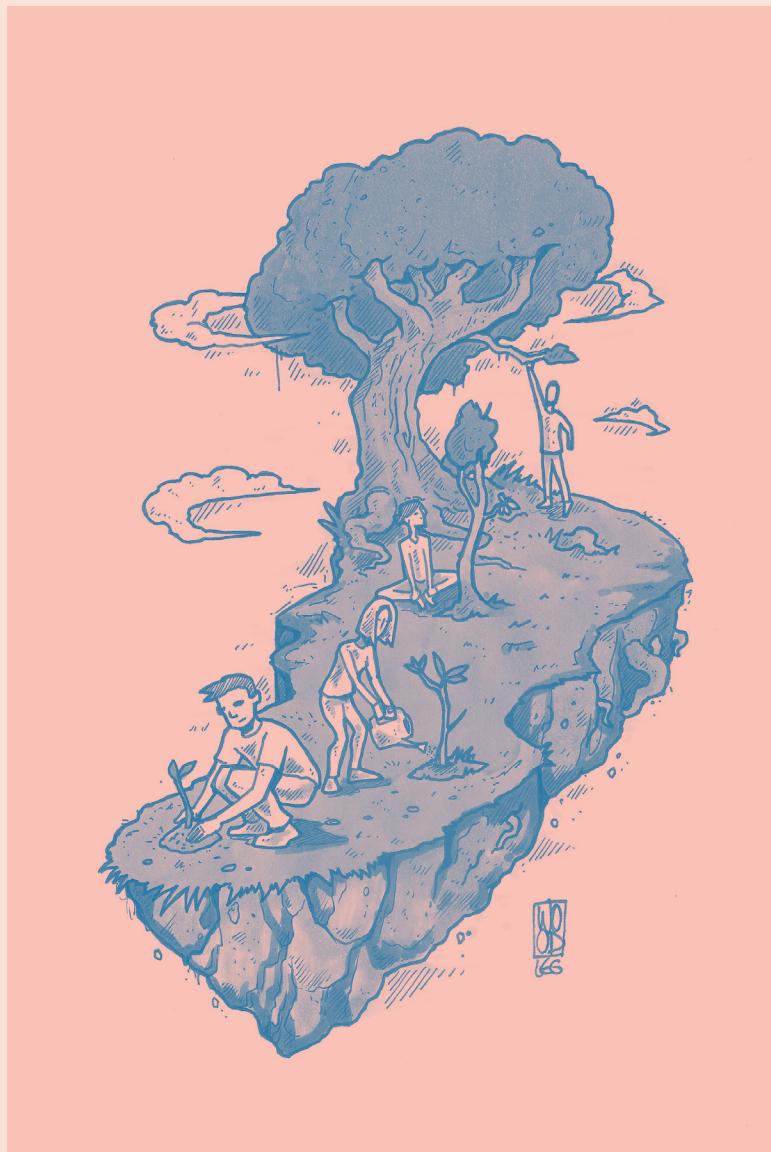
  Working toward a specific future involves making decisions about what the world should look like. This means choosing which values of the present should be amplified and carried forward in transition.

Figure 7: Qualities of transition

Transition is complex, composed of many different projects directing forces of change in different ways, at different scales, over different time periods. Transition is ongoing, continuously changing as worlds evolve and the visions of a desired future change with them. Transition is values-based, shaped by the values that inform the futures we desire and the ways we work toward them.

COMPLEX
Transition is a large-scale, multi-level movement consisting of many projects.

VALUES-BASED
Intentional transition work is guided by the values people seek to carry into the futures they desire.

DESIRED FUTURE

TIME

ONGOING
Transition occurs across multi-chronic timescales and is oriented by constantly evolving worlds and visions of desired futures.

2.

Designing for Transitions

There is an area of research and practice that offers an action-oriented approach to transition: *design*. Design is a crucial perspective for understanding and enacting transitions because it is a key force in creating future ways of living. In this chapter, we explore how design is involved in facilitating transitions.

How transitions happen

There are several strands of research that study and theorize how transitions happen. These kinds of inquiries happen across disciplines and fields which include, but are not limited to:

cultural studies	e.g., articulation theory (Hall, 1996; Grossberg, 1986)
economics	e.g., path dependency (Araujo & Harrison, 2002; Nee & Cao, 1999), long waves (Kondratieff & Stolper, 1935), the great transformation (Polanyi, 2002), regulation theory (Jessop, 2001; Tickell & Peck, 1995)
innovation studies	e.g., systems of innovation (Breschi & Malerba, 1997; Malerba, 2002)
philosophy	e.g., historical ontologies (e.g., Heidegger, Foucault, Deleuze, and Latour), alterations to everyday life (Debord, 1981; Lefebvre, 1991)
program evaluation	e.g., theories of change (Retolaza, n.d.; Taplin, Clark, & Collins, 2013)
sociology	e.g., interstitial revolutions (Wright, 2010), world systems theory (Wallerstein, 2011), social movement dynamics (McAdam, Tarrow, & Tilly, 2001)
systems theory	e.g., panarchy (Gunderson, 2001), theories of emergence (Sawyer, 2005), system leverage points (Meadows, 1999), second-order cybernetics (von Foerster, 2003)

There are also interdisciplinary fields of study strictly dedicated to studying transition. These include, for example, sociotechnical transition management theories (Loorbach, 2010; Rotmans, Kemp, & van Asselt, 2001) and analytical frameworks from the sustainability transitions field including the multi-level perspective (Geels, 2002; Rip & Kemp, 1998) and strategic niche management (Schot & Geels, 2008). These research areas look at, for example, how small innovations can scale into larger-scale transitions, how various actors are involved in bringing transitions about (Wittmayer, Avelino, van Steenbergen, & Loorbach, 2017), and typologies of transition "pathways" (Berkhout, Smith, & Stirling, 2004; Geels & Schot, 2007). Though these research areas study how transitions happen, the design world is beginning to offer an action-oriented perspective on transitions.

Design

To begin our discussion of designing for transitions, we need to start by talking about design. What is design, really, and what does it mean to design? We will not be giving a simple answer to these questions in this section but instead hope to offer many layers of meaning, to build up and expand this notion of *design*.

These are transformative, transitional times for design. The ways in which design is understood, practiced, and critiqued are in transition. Design is no longer simply a practice, but also a young, evolving, and growing discipline of academic study. We situate our work in this territory and time of design disruption, a time when design is reckoning with its complicity with coloniality (Fry, 2017; Kiem, 2017; Schultz et al., 2018; Tlostanova, 2017), social inequalities (Costanza-Chock, 2018a, 2018b), capitalism (Boehnert, 2014, 2018), and unsustainable ways of life (Fry, 2009).

Designerly approaches to problems

Design is a field of study, an area of research, a professional practice, and an everyday human activity. Defining design can begin all sorts of debates. But, we will offer a few common definitions here. To design is "to devise courses of action aimed at changing existing situations into preferred ones" (Simon, 1969). "We design, that is to say, we deliberate, plan and scheme in ways which prefigure our actions and makings" (Willis, 2006). "Design is the human power of conceiving, planning,

and making products that serve human beings in the accomplishment of their individual and collective purposes" (Buchanan, 2001). Design can easily be conflated with "problem-solving." But, design has its own unique kinds of problems and its own unique ways of approaching them. Design aims to resolve problems that are situated in the everyday lives of people. Because of the fuzziness of some problems design tackles, design can be as much about problem-making and problem-framing as it is about "problem-solving."

The Ethics and Politics of Design

There are ethical and political dimensions to design. On the ethical side, design involves putting forward something as "better" than what currently exists; it involves making a choice about what is "good" or "preferable." On the political side; a design is "preferable" for some people but not for all. Design is always done with someone (or something) in mind and involves decisions about who benefits from what is designed.
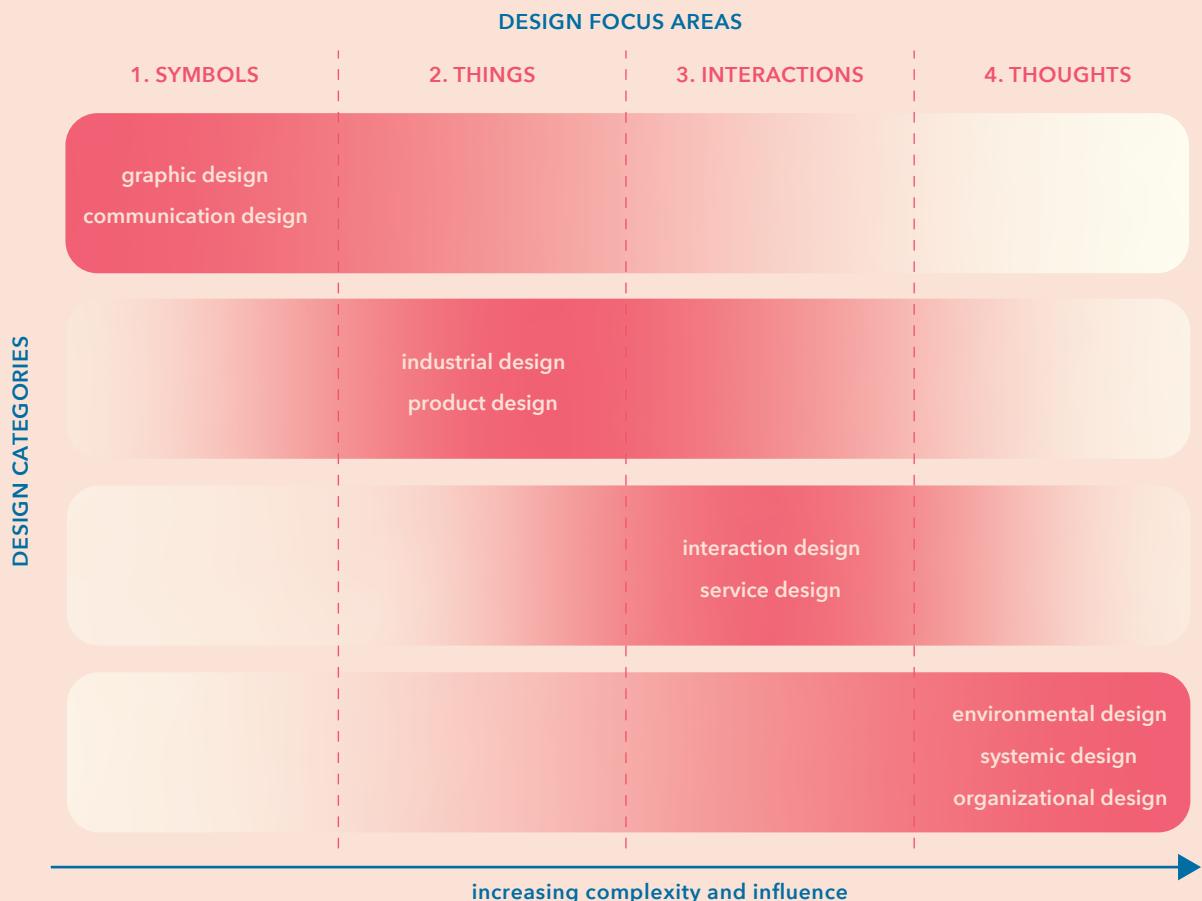
Expanding Design

When thinking about design in such broad terms, it can apply across domains, situations, and types of problems. A popular understanding of design might bring to mind material and aesthetic concerns, thoughts of objects, products, websites, graphics, posters. This sort of traditional design is still widely-practiced, important, and profound, but design has evolved into something more expansive. Looking to evolutions like design thinking, design strategy, or systemic design, we can see ways of thinking and practicing that orient design toward larger and more complex problems. The object of design has expanded and the understanding of what can be impacted through design has expanded. The meaning of the word has expanded such that "the term no longer has any limit" (Latour, 2008).

Though common conceptualizations of design focus on the tangible (the design of products or graphics), design goes far beyond this popular understanding. The "things" that are designed can be relationships (the design of interactions between humans and computers), systems (the design of how humans interact within an organization), or even transitions. These ideas mirror what Buchanan (2001), and many others since him, have organized into design "orders": symbols, things, actions, and thought (see Figure 8). These orders are not meant to be distinct, but centres of attention—places from which different types of design dwell and think.

Figure 8: Four orders of design
The four orders of design (adapted from Buchanan, 2001) illustrates the variety of design practices and approaches. Each category of design works primarily on a certain focus area, though they are not necessarily constrained to that area alone.

DESIGN FOCUS AREAS

1. SYMBOLS	2. THINGS	3. INTERACTIONS	4. THOUGHTS
graphic design communication design			
	industrial design product design		
		interaction design service design	
			environmental design systemic design organizational design

DESIGN CATEGORIES

increasing complexity and influence

Ontological Design

Understanding design begins with an understanding of how designed things come, in part, to shape ways of living. Design shapes worlds, shapes possibilities of existence, shapes what it means to be human. This world-shaping notion is called ontological design; it refers to how design can shape and constrain ways of being in the world. We trace the idea to Terry Winograd and Fernando Flores's (1987) *Understanding Computers and Cognition*: "in designing tools we are designing ways of being" (p. xi). By introducing designed "things" to a world, those designs alter realities and shape possibilities. As an example, Arturo Escobar (2018a, p.111) illustrates how design is ontological by contrasting different spaces for human dwelling:

> **"I often give the example of the Amazonian indigenous maloca (indigenous longhouse) versus the archtypical nuclear-family house in suburban America. The maloca can house several dozen people under a single roof, even if the act of habitation obeys certain rules of behaviour and spatial distribution. As I jokingly say, paraphrasing, "give me a maloca, and I will raise a relational world" ...; conversely, give me a suburban home, and I will raise a world of decommunalized individuals separated from the natural world. Design thus inevitably generates humans' (and other Earth beings') structures of possibility."**

There is great circularity when considering how design can be ontological; Anne-Marie Willis (2006) describes this as a double movement: "we design our world, while our world acts back on us and designs us." This type of thinking is not unique to design,[3] but points to the importance of understanding how human creations come to restructure what it means to be human. While much of what has been designed can be seen to have these sorts of world-shaping impacts, not all that is designed is designed with such intentions, that is, designed with an awareness of this double movement, of the eventual reshaping of human realities. Designing with a consideration of ontological impacts is what we are calling ontological design.

When design is viewed from this ontological perspective, its link to transition begins to become clear. Shifts in ways of living can emerge through design. Designers oriented toward transition can encourage shifts aligned with the futures they desire through the "things" that they design (where thing, as we noted before, can mean anything from product, graphic, or interaction, to systems, organizations, and environments).

3. Anne-Marie Willis's quotation itself is reminiscent of Churchill's "we shape our buildings and afterward our buildings shape us" and Culkin's adage (about McLuhan's thinking) "we shape our tools and thereafter they shape us."

Designers

On one level, a designer is anyone embedded in the discipline of design with specific design knowledge and the accompanying "culture, tools, and professional practice" (Manzini, 2015). A professional designer might be someone educated in an institution that teaches design skills and ways of thinking and/or someone with a role and title like graphic designer, interaction designer, or systems designer. But just as the definition of design has broadened with our understanding of design's application in increasingly large and complex situations, our understanding of who might be considered a designer and who is carrying out design work has similarly expanded. Some view design as a fundamental human activity (Fry, 2012). To paraphrase design scholar Ezio Manzini (2015), we live in a world in which "everybody designs." What Manzini and others mean by this idea is that the intentional designing of things put out into the world is a process happening everywhere, in every domain, and by anyone, no matter their professional title. For example, grassroots organizations design initiatives to address local issues "such as lack of green space in a neighborhood, difficulty of access to organic food, alternative mobility" (Manzini, 2015, p. 41), doctors design patient experiences, and parents design the environments in which their children are raised.

When thinking about transition, both expert and non-expert design is involved, though these two sets of design actors hold different roles and responsibilities. If everyone designs, then everyone has a responsibility to understand the ontological implications of the things they put out into the world. But, those who hold the professional title of designer carry a further responsibility. To take on the title of professional designer is to be seen as an expert in design process, an expertise that can allow actions to carry more weight in deciding what things do and do not get put out into the world. This power requires that professional designers carry an even more conscious responsibility for the future-making influence of their practices.

Transition design
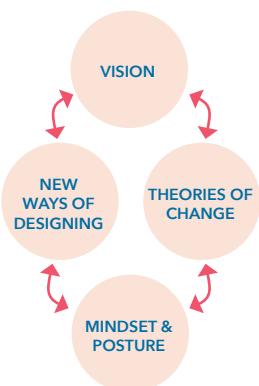
Many discourses within design talk about deep, world-transforming change. Manzini (2015) outlines design for social innovation, and similar ideas are echoed in DesignX (Norman & Stappers, 2015), systemic design (Systemic Design Association), service design, and design for sustainability. Irwin (2018) argues that while these emerging areas of design are better suited to addressing complex problems, they still "tend to frame problems within relatively narrow spatio-temporal contexts and do not offer a comprehensive approach for identifying all stakeholders and addressing their conflicts." Transition design is one alternative approach to longer-term, transformative change.

Emergence of Transition Design

In the past decade, the design school at Carnegie Mellon University (CMU) in Pittsburgh, Pennsylvania has proposed the field of transition design as an area of design research, study, and practice. Transition design "takes as its central premise the need for societal transitions to more sustainable futures and argues that design has a key role to play in these transitions" (Irwin, Kossoff, Tonkinwise, & Scupelli, 2015). The transition design framework developed by CMU outlines four main areas of inquiry and practice: visions for transitions, theories of change, posture & mindset, and new ways of designing. The 'four areas [contain] a variety of practices that can evolve and change, and which together, form a "palette" from which practitioners and researchers can configure situation-appropriate designed interventions' (Irwin, 2018). What these practices look like and how they are interrelated, however, is an ongoing area of development for the transition design community.

Figure 9: CMU's transition design framework

Transition design has now grown as a discourse beyond the work done at CMU. There have been several transition design journal special issues (e.g., *Design Philosophy Papers*; Kossoff, Irwin, & Willis, 2015; *Strategic Design Research Journal*; Franzato, Botero, & Borrero, 2018; *Cuadernos del Centro de Estudios de Diseño y Comunicación*; Irwin & Di Bella, 2019), design conferences are including transition design tracks (e.g., Design Research Society, Design Innovation Management), and is being taught and discussed in design schools globally. The broader design community is also grappling with what it means to design for transition, and what design practices should look like in the transition context.

What is designed in transition design?

Design for transition does not have to, on the surface, look all that different from non-transition-oriented design. This is because the objects of design are not necessarily different (i.e., transition design spans the four orders of design). Designing for transitions is about giving "a particular direction … to the four order of design" (Scupelli, 2015) and how anything might be oriented toward a desired future.

Figure 10: Transition and the four orders of design
When design is oriented toward transition, any kind of design does work guided by the vision of a desired future (adapted from Buchanan, 2001).
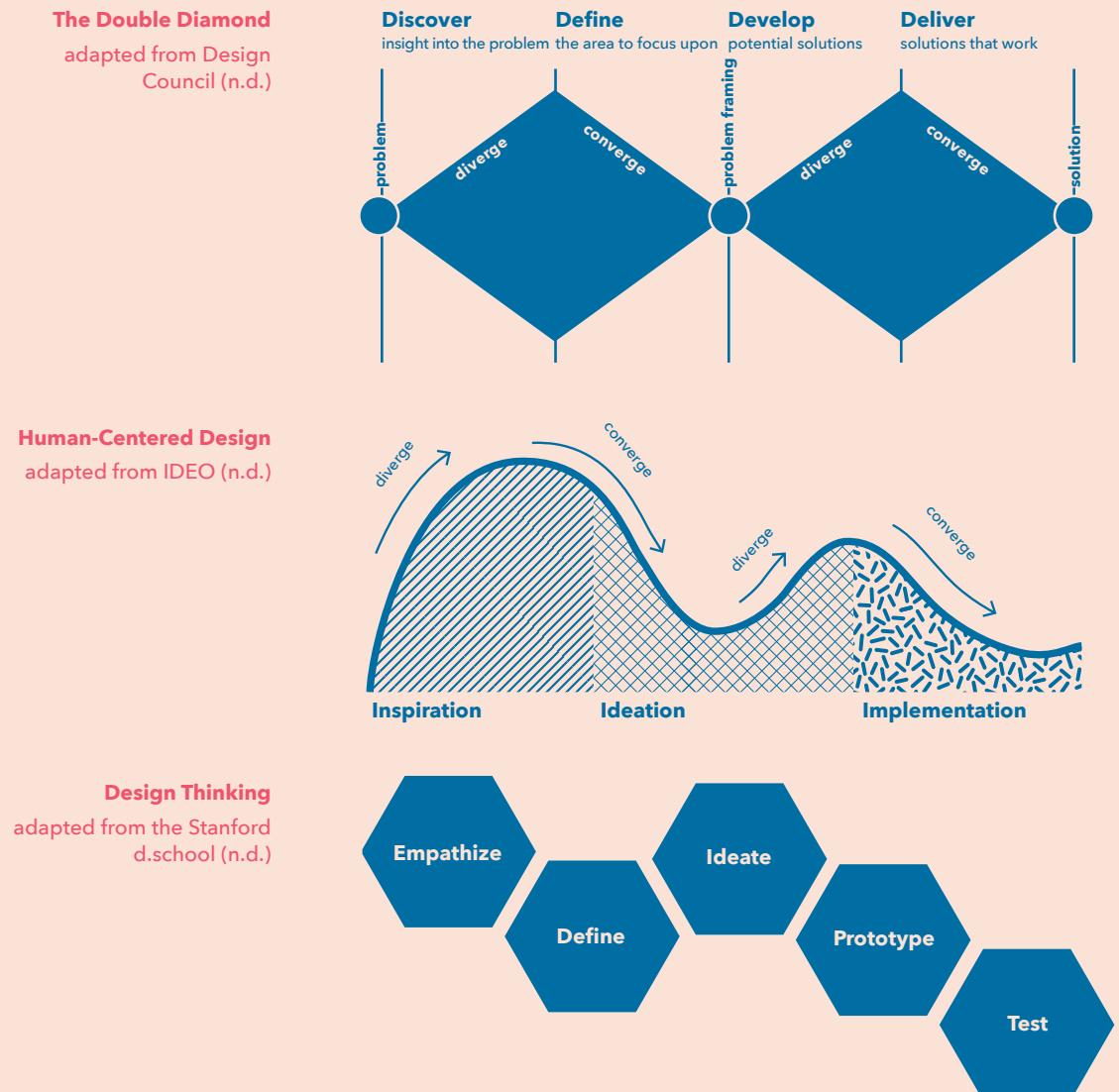
DESIGN FOCUS AREAS

| 1. SYMBOLS | 2. THINGS | 3. INTERACTIONS | 4. THOUGHTS |

graphic design
communication design

industrial design
product design

interaction design
service design

environmental design
systemic design
organizational design

DESIGN CATEGORIES

DESIRED FUTURE

The design process

The most simple explanation of the traditional design process might be articulated as the process of working from a problem toward a solution. More complex explanations of the design process have come to include important components like iteration (e.g., Wasserman, 2011), divergent and convergent thinking (e.g., Jones, 1992; Brown, 2009), prototyping (e.g., Saffer, 2010), and evaluation (e.g., Asimov, 1962).

Figure 11: Design processes

The Double Diamond
adapted from Design Council (n.d.)

Discover insight into the problem
Define the area to focus upon
Develop potential solutions
Deliver solutions that work

problem — diverge — converge — problem framing — diverge — converge — solution

Human-Centered Design
adapted from IDEO (n.d.)

diverge — converge — diverge — converge

Inspiration — Ideation — Implementation

Design Thinking
adapted from the Stanford d.school (n.d.)

Empathize — Define — Ideate — Prototype — Test

The transition design process

Transition design has its own unique process, more oriented toward multi-level and multi-scale change. CMU has described their transition design approach as a three-phased process: reframing, designing interventions, and waiting and observing (Irwin, 2018).

Table 1: The CMU transition design process (adapted from Irwin, 2018)

PHASE	DESCRIPTION
Reframing: Past and Present	Reframing the present in order to arrive at a shared understanding of the problem Reframing the future through the co-creation of visions of where we want to go.
Designing Interventions	Situating the problem map and future vision within a large, spatio-temporal context. Identifying consequences and root causes at multiple levels of scale in order to design interventions aimed at resolving the problem, catalyzing system transition.
Waiting & Observing	Periods of activity and intervention are counterbalanced by periods of observations and contemplation which requires new mindsets and postures.

CMU's process emphasizes designing a transition movement rather than how to orient any design project toward transition.

Designing a transition vs. designing for transitions

In contrast to the CMU approach, our approach to transition design emphasizes designing *for* transitions rather than designing *a* transition. Since transition emerges through many changes, design is involved not only in attempting to design an entire transition, but also in facilitating how socially diffused projects may be designed with transition in mind.

The designing for transitions approach

In contrast to other design approaches, designing for transition involves orienting work toward a vision of a desired future. This vision evolves as our worlds change over time. Similarly, designing for transition entails an ongoing, reflective process that orients all design actions, whether small or large, immediate or long-term, toward the current desired future.

Transition is all about the process

Designing for transition needs to look quite different from design at the traditional level "characterized by linear processes and de-contextualized problem frames, whose objective [is] the swift realization of predictable and profitable solutions" (Irwin, 2018). Importantly, design at the transition level is different because the desired outcome shifts as time and contexts change. The world that might emerge from transition work is one that is difficult to know or even imagine when designing toward it. Yet the values used to define a desired future can be known and used to inform the design process.

Transition is informed by visions of a preferable future, but it is not defined by these visions. Transition is defined by what emerges in the process of moving toward a preferable future. For this reason, when considering transition, it is important to look beyond the visions involved in transition to the process of transition itself.

The Messy Middle
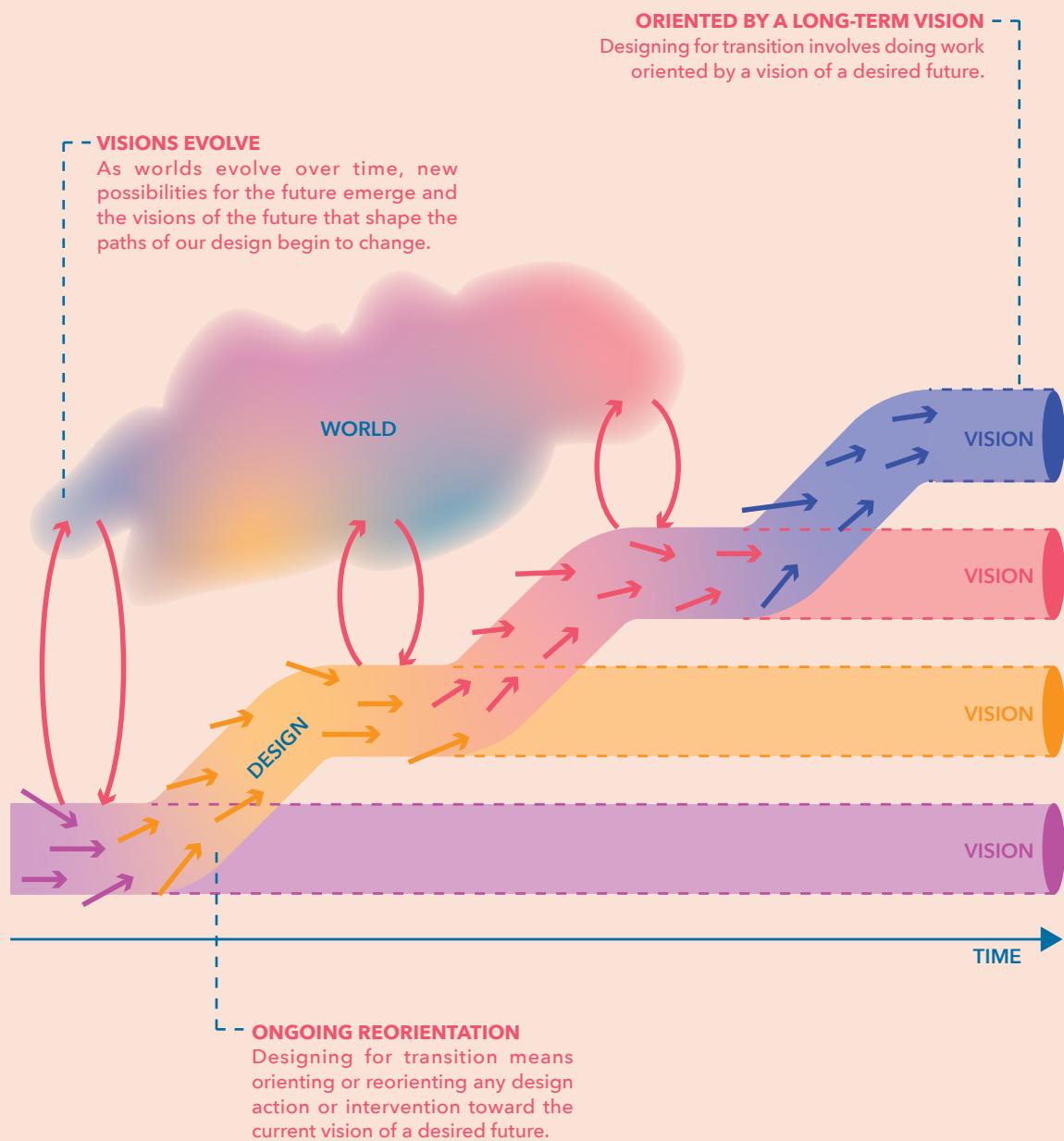
There is a temptation when working toward the desired change of transition to focus on the desired change itself. We would argue that the temptation to focus on a distinct, clearly defined end state can obscure the often messy and emergent change happening at different rates and at different levels throughout the transition process.

We are interested in the messy middle part between our current world and the possibility of actualizing the vision of our desired world. We believe that shifting our focus to this middle, to the way that we are envisioning and enacting the worlds that we want, requires us to be more conscious and critical of our practices in bringing about change.

Figure 12: Transition design
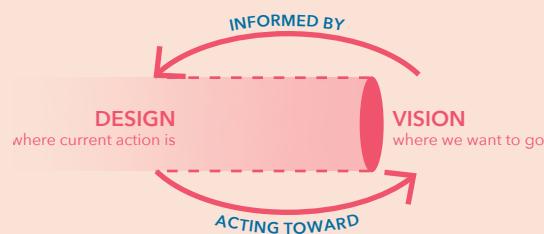
AN OVERVIEW OF THE TRANSITION DESIGN PROCESS
Designing for transition describes design that is informed by a vision of a desired future. This design acts toward creating this future, reoriented in an ongoing way as visions evolve.

ORIENTED BY A LONG-TERM VISION
Designing for transition involves doing work oriented by a vision of a desired future.

VISIONS EVOLVE
As worlds evolve over time, new possibilities for the future emerge and the visions of the future that shape the paths of our design begin to change.

WORLD

DESIGN

VISION

VISION

VISION

VISION

TIME

ONGOING REORIENTATION
Designing for transition means orienting or reorienting any design action or intervention toward the current vision of a desired future.

VISIONS

Designing for transition describes design informed by a vision of a desired future. This design acts toward creating this future.

INFORMED BY

DESIGN
where current action is

VISION
where we want to go

ACTING TOWARD
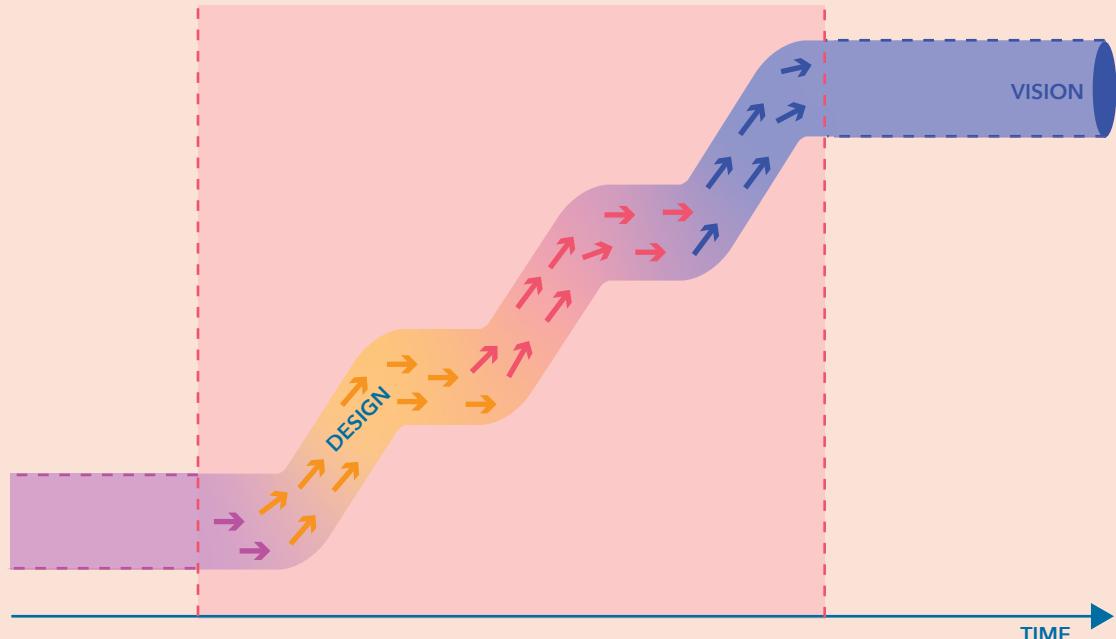
THE WORLD

Evolving worlds change the futures desired and considered possible. As the visions that orient design for transition change, the work of transition design evolves too.

WORLD

DESIGN

THE MESSY MIDDLE

It is the convergence of many projects together that defines a transition. Transition emerges through the process of working toward it, in the messy middle.

DESIGN

VISION

TIME
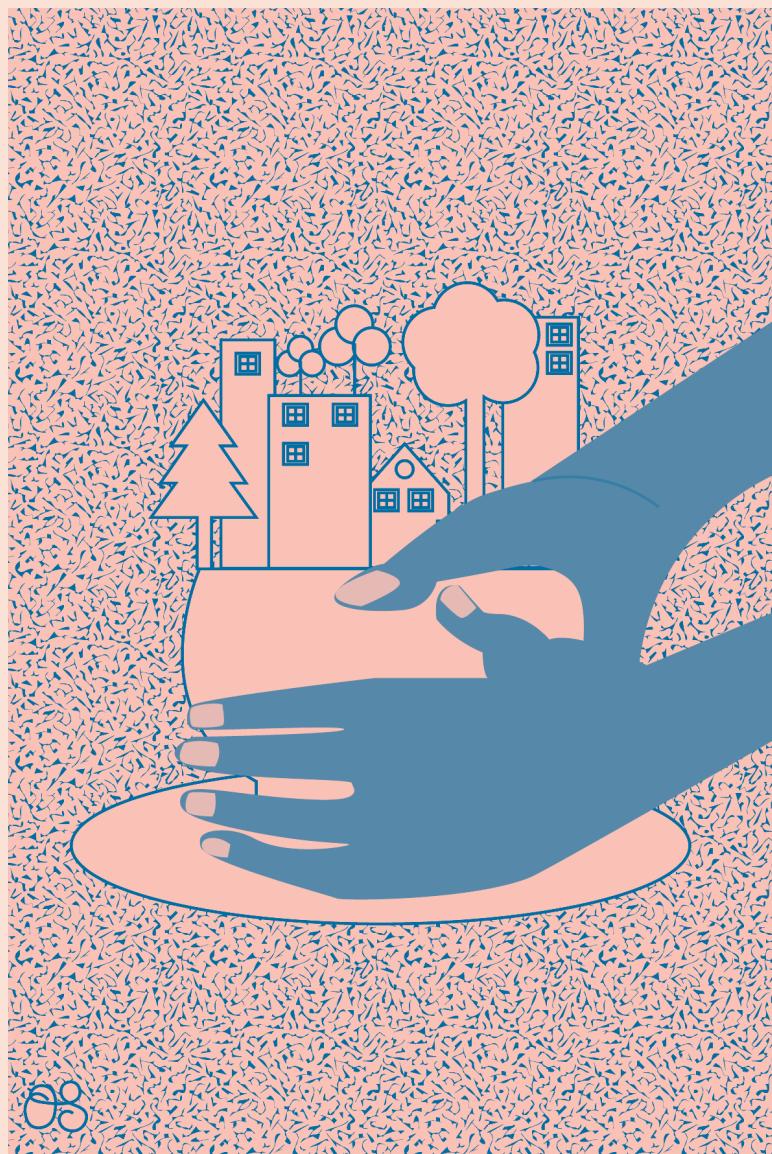
Designin
principle

g from
es

3.

Methodology

As designers moved by the prospect of facilitating transitions to different worlds, we take an interest in how design practices, methods, and mindsets need to be adapted and rethought for the complex and expansive transition context. We undertook this research because we wanted to develop a greater understanding of what it means to practice as a "transition designer". We conducted this research with our own design practice in mind. In this chapter, we elaborate our methodology and research phases in more detail.

Redesigning designing

The object of our inquiry and intervention was our design practice itself. In this sense, our research can be broadly classified as *first-person* design research, or *practice-based* design research.[4] During a design engagement with an environmental organization in the Northwest Territories, we employed a process of principles-based designing. We then reflected upon and evaluated that process and the principles from which we were designing using principles-focused evaluation (Patton, 2017). We will elaborate these terms later in this chapter and our principles themselves in the following chapter.

After contemplating what it means to design for transition, we began synthesizing our thinking into a set of principles that could be applied during the transition design process. We are acting as our own case study, exploring what it means to design from principles in the transition context. We seek to understand our own principles and how to design with them not because our principles will apply for all designers but because other designers might learn from our critical reflection on and engagement with our practice.

4. Design research is a collage of many different research styles. Frayling (1993) describes three distinct design research styles: research into design, research through design, and research for design. There have been many more taxonomies of design research, and our research is just one part of the heterogenous world of design research.

Principles-based designing

What is a principle?

Principles direct human action by "[providing] guidance about how to think or behave toward some desired result" (Patton, 2017, p. 9). Principles differ from rules because they do not prescribe precisely how to act in a given situation; they must be interpreted depending on the context in which they are being applied.

Patton (2017) describes two types of guiding principles: moral and effectiveness principles. Moral principles concern what is "right" whereas effectiveness principles concern what "works" when trying to achieve certain goals. In our research, we have developed a set of effectiveness principles to guide what "works" in our transition designing process.

Principles and design

We argue that designers generally operate from implicit principles that have often not been properly considered or interrogated. We propose principles-based designing as a way for designers to be explicit about the principles that guide their design processes so they can consider whether such principles are effective for their purposes.

It is important to note that we are not talking about *design principles*, or principles against which a design is evaluated. We are talking about principles that are *applied during the design process* and against which the design process is evaluated.

Principles in complex, evolving situations

Principles are useful when navigating complex, dynamic situations. They help direct and inform what should be done while still leaving room for interpretation and response to context. Transitions are complex and evolving, and so principles-based design is a particularly suitable approach.

Effective principles

To develop our principles, we followed a framework set out by Michael Patton in *Principles-Focused Evaluation* (2017). Patton outlines criteria for effective principles following the GUIDE mnemonic: a "high-quality principle (1) provides guidance, (2) is useful, (3) inspires, (4) supports ongoing development and adaptation, and (5) is evaluable" (p. 36).

Principles-focused evaluation

Properly evaluating principles requires testing them in practice (Patton, 2017). Evaluating principles involves three components: determining "(1) whether principles are clear, meaningful, and actionable, and, if so, (2) whether they are actually being followed, and, if so, (3) whether they are leading to desired results" (p. 9).

Table 2: Principles-focused evaluation GUIDE criteria
The GUIDE criteria for specifying effective principles (adapted from Patton, 2017)

CRITERION	DESCRIPTION
Guiding	• Prescriptive: provides advice and guidance on what to do, how to think, what to value, and how to act to be effective. • Offers direction and is sufficiently distinct that it can be distinguished from contrary or alternative guidance.
Useful	• Actionable, interpretable, and feasible • Points the way toward desired results for any relevant situation
Inspiring	• Values-based, incorporating and expressing ethical premises • Articulates what matters, both in how to proceed and the desired result • Articulates how to do things right (effectively) and the right thing to do (expresses the values basis for action)
Developmental	• Adaptable and applicable to diverse contexts and over time • Context-sensitive and adaptable to real-world dynamics, providing a way to navigate the turbulence of complexity and uncertainty • Enduring (not time-bound) in support of ongoing development and adaptation in an ever-changing world
Evaluable	• Possible to determine whether it is actually being followed • Possible to determine what results from following the principle • Possible to determine if following it takes you where you want to go

Research phases

Our research can be broken down into phases carried out in an overlapping fashion. As designers driven to improve our practices, our "real" lives and this research have become deeply entangled; it is hard to say when our research began and what is distinctly within the domain of this research.

Phase 1: Understand designing for transitions

We began this project with the belief that transitions to alternative futures are necessary, and that we, as designers, want to be involved in bringing transitions about. We started our research with a literature review of transition-related discourses to understand what transition means, how it happens, and how design could be involved.

Phase 2: Explore an alternative future

Concurrrently to phase 1, we developed a vision of our desired future. This was a product of collaboration with each other and our environments. The foundation for this project emerged through a period of immersion in design discourses (particularly transition design and decolonizing design discourses), activism and social movements we participate in, and discussions with each other and our peers. Beyond literature, several experiences were formative in shaping our thoughts: hanging out at the *Design Research Society* conference, as well as the *Relating Systems Thinking and Design* symposium; a discussion in a park that we organized with friends and community members; and reviewing related discussions on social media platforms.

REFLECTIVE PRACTICE

Phase 3: Develop principles for transition designing

Our principles emerged through a long process of contemplating and synthesizing our thoughts about a preferable future as well as coming to understand the unique qualities of transition. We developed principles in line with these qualities, using Patton's (2017) GUIDE as a rubric for how to articulate them.

Phase 4: Test
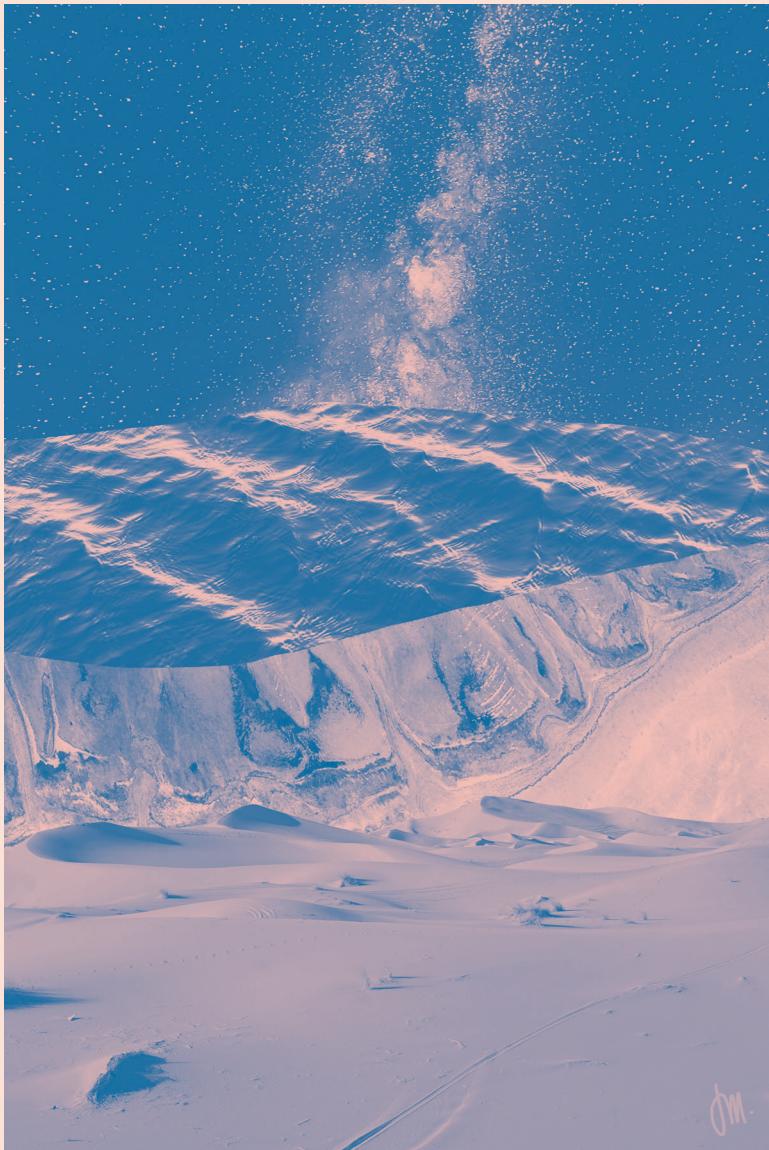
To evaluate our principles, we needed to test them in practice. In the winter of 2019, we were hired by an environmental non-profit, Ecology North, based in Yellowknife, Northwest Territories, to research what a sustainability-oriented innovation hub might look like and how it could benefit northern communities. They agreed to have us use this project as a test case for our research. Our principles informed the design of our research and engagement processes. The specific methods we employed during this case study are outlined in chapter 5.

Phase 5: Reflect and evaluate

We documented our design process and our engagement in Yellowknife and reflected on our principles using principle-focused evaluation. We examined 1) how we made our principles actionable, 2) how our principles informed our design, and 3) their effectiveness. Based on these evaluations, we discussed what principles-based design could offer to those designing for transitions.

4.

Arriving at Principles

The methods and mindsets for designing for transition are not well-developed. What does it mean to orient design work toward transition? In this chapter we articulate a set of principles that can guide design processes for transition.

Principles for transition designing

As design's domain expands to include transition, design practices must likewise expand. Designers cannot continue to use old tools without adapting them to the unique qualities of transition (Tonkinwise, 2015, 2019). Care needs to be taken in *how* transitions are envisioned and constructed to effectively design for transition.

To develop design processes suitable for transition, let us look back at what makes transition unique (see Chapter 1 for the detailed explanation of each of these):

Complex Transition is by definition a large-scale, multi-level movement consisting of many projects. Transitions are socially diffuse in that participants may not know each other or be intimately involved.

Ongoing Transition occurs across multi-chronic timescales and is oriented by constantly evolving worlds and visions of desired futures.

Values-based Intentional transition work is guided by the values people seek to carry into the futures they desire.

Principles

We developed a set of principles to guide transition designing that follow from the unique qualities of transition. They allow us to carefully, intentionally, and explicitly make our design practice suitable for transition specifically.

1 COMPLEXITY PRINCIPLE

Understand and work with context instead of treating the future as a blank slate.

Transition projects take place in complex situations, in contexts with rich histories and trajectories in place. Contexts are layered; they include the past, the present, the people, the place, the time, and the many narratives in which a project is embedded. These cannot be ignored; designers cannot consider the future as a blank slate, imagining impossible utopias that dismiss the messiness of the present. All possible futures emerge from specific histories and specific presents. Working toward transition must start with an understanding of the present in all its messiness, because that present shapes and constrains the futures that are possible.

Tony Fry (2017) writes: "while the future is unknown, it is only partly so. This is because it contains so much that has been thrown into it." The future does not necessarily contain the past, but it contains traces of the past. These traces are articulated into the future in different ways.

2 ONGOINGNESS PRINCIPLE

Focus on the process instead of the end vision.

Transition projects occur across many time scales and are working toward a future that cannot be known. Transition work is oriented by an end vision, but while working toward that vision, worlds are changing and transition is happening. As worlds evolve, new possibilities for the future emerge.

Designers need to be attuned to what emerges through the transition process, to focus on how they transition instead of trying to stick to one vision. Designing "over time demands something very different from a commanding desire for control; but it also requires being released from a sense of perfectionism, from the idea that what is being designed might be finished, in every detailed aspect, once and for all" (Tonkinwise, 2019).

3 VALUES PRINCIPLE

Design in a way that aligns with the values of the world being transitioned toward.

As transition aims to shape particular futures, designers need to ensure they understand the values that inform their work and the futures they are enacting. Donna Haraway (2016), a feminist science and technology scholar, drawing on Marilyn Strathern (1990), summarizes this notion as "it matters what thoughts think thoughts" (p. 35).

To us, Haraway is speaking to how the ways we organize our thoughts shape the thoughts we can think. It matters what type of worlds we find meaningful because they shape what types of worlds we enact and create. Similarly, the ways in which we design determine what can ultimately be designed. Transition is about intentionally working toward a certain type of future, which means working to encourage and prioritize certain values. Designers carry values with them into their processes, whether they make them explicit or not. These values end up shaping the changes they make to their world. It matters how designers design.

Designing in a way that is explicitly informed by the values of the world being transitioned toward is a *meta-principle* of sorts. The values depend upon the designer and their vision of a desired future. Each designer can develop their own set of principles in line with the values they want to amplify in transition.

The transition we want

As designers, we recognize that intentionally working toward transition entails understanding the values we would like to carry forward into our desired future. According to the third principle, we developed additional design principles based on the values we would like to amplify in transition.

Transitioning from and toward what?

Because transition is about shifting worlds in fundamental ways, we might understand the difference between the current world and the world we want to transition toward through shifts in the values that underpin it. When we imagine a desirable future, there are certain elements about the present that we would like to move away from and certain elements that we would like to carry forward and amplify. The ambition of transition represents a desire to see certain aspects of the current world "turned down" and certain aspects "turned up."

Drawing on movements and discourses that inspire us, our own experiences, and ongoing reflection, we sought to understand the key values we would like to see carried forward into the future. We looked to initiatives and discourses whose values of a different future we share, seeking to synthesize these into three main values to be turned up or down. These three deep shifts provide the foundation for the world we want to work toward. They are shifts in values around: 1) how difference is considered, 2) how connections are considered, and 3) how the future is considered.

Table 3: Value shifts
The value shifts of the transition we want.
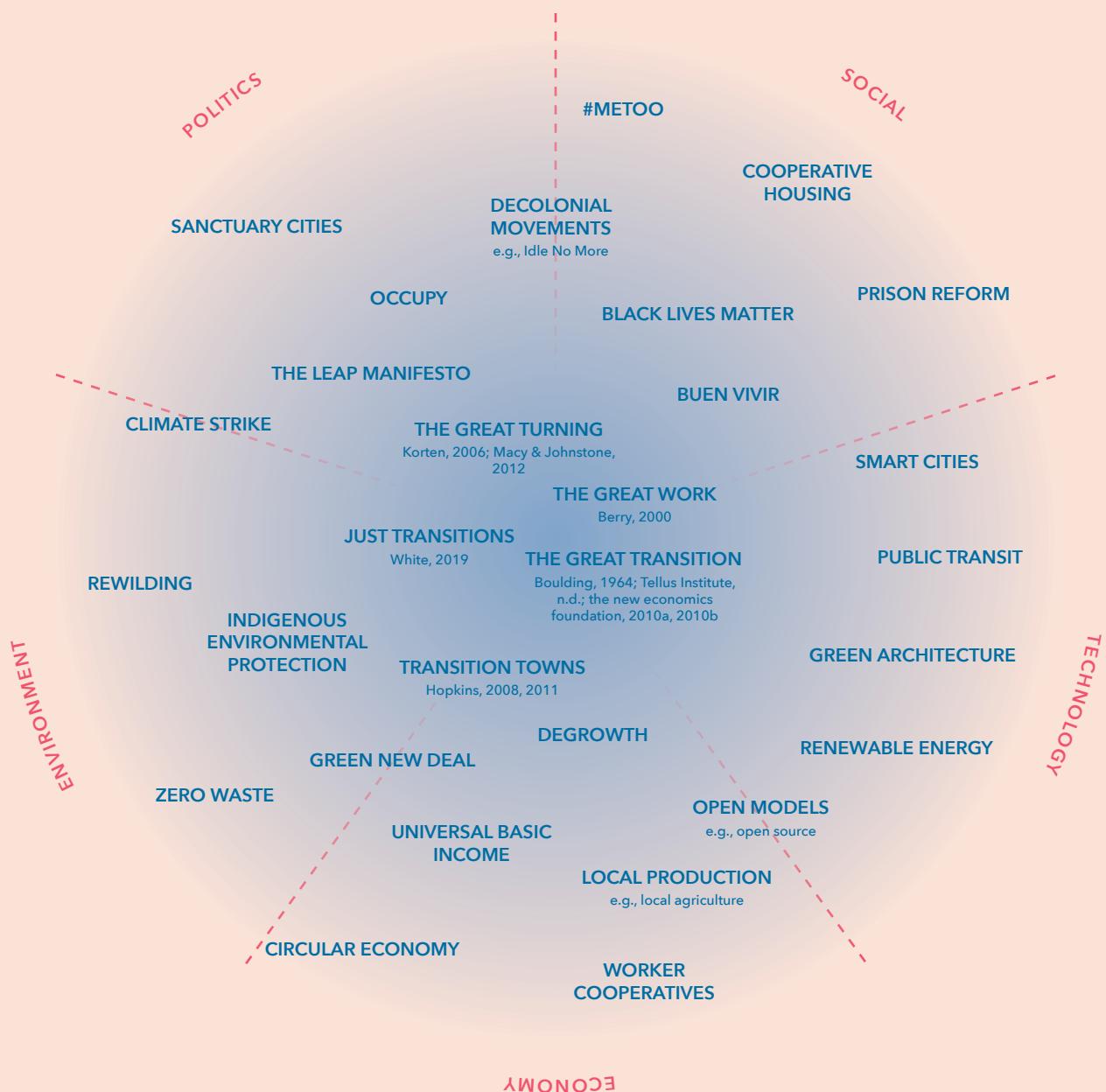
DIMENSION	TURN DOWN	TURN UP
Difference	Universality	Pluriversality
Relations	Independence	Interdependence
The future	Short-term thinking	Sustainable thinking

Transition initiatives and discourses

The term transition generally implies a specific vision for the many individuals, academics, organizations, and movements for whom it is an ongoing area of interest and action. Below are a few key transition discourses and initiatives whose visions align with our own vision of a desirable future.

Figure 13: Transition project examples
A sample of transition initiatives and discourses working toward futures that share the values of the transition we want.

POLITICS

SOCIAL

#METOO

COOPERATIVE HOUSING

SANCTUARY CITIES

DECOLONIAL MOVEMENTS
e.g., Idle No More

PRISON REFORM

OCCUPY

BLACK LIVES MATTER

THE LEAP MANIFESTO

BUEN VIVIR

CLIMATE STRIKE

THE GREAT TURNING
Korten, 2006; Macy & Johnstone, 2012

SMART CITIES

THE GREAT WORK
Berry, 2000

JUST TRANSITIONS
White, 2019

THE GREAT TRANSITION
Boulding, 1964; Tellus Institute, n.d.; the new economics foundation, 2010a, 2010b

PUBLIC TRANSIT

REWILDING

INDIGENOUS ENVIRONMENTAL PROTECTION

TRANSITION TOWNS
Hopkins, 2008, 2011

GREEN ARCHITECTURE

ENVIRONMENT

TECHNOLOGY

DEGROWTH

RENEWABLE ENERGY

GREEN NEW DEAL

ZERO WASTE

OPEN MODELS
e.g., open source

UNIVERSAL BASIC INCOME

LOCAL PRODUCTION
e.g., local agriculture

CIRCULAR ECONOMY

WORKER COOPERATIVES

ECONOMY

VALUE 1 SHIFTING HOW WE THINK ABOUT DIFFERENCE

Pluriversality

As we explained in chapter one, people are grounded in their understandings of their world. Humans may inhabit a single Earth, but live within multiple worlds upon it. This concept of multiple but overlapping and interacting worlds is that of the pluriverse. Walter Mignolo (2013) describes the pluriverse as an "entanglement of several cosmologies connected today in a power differential. That power differential is the logic of coloniality covered up by the rhetorical narrative of modernity." In other words, though many worlds exist, certain worlds are given more power or are considered more true than others. Today, worlds and realities that fit the narrative of "modernity" are often privileged over others. This modern ontology might be called "the one-world world" (Law, 2015), "a world that has granted itself the right to assimilate all other worlds and, by presenting itself as exclusive, cancels possibilities for what lies beyond its limits" (de la Cadena & Blaser, 2018, p. 3). Narratives within modernity are often defined by the belief that there is a correct and true way of being in the world, and by an attempt to dominate or to universalize this single reality. The modern project means that other-than-modern worlds have to fight for their existence and validity.

To care about the pluriverse, its maintenance, and its flourishing is a political project that aims to erase the hierarchies that exist between worlds. As Mignolo (2018) explains, "the pluriverse consists in seeing beyond this claim to superiority, and sensing the world as pluriversally constituted."

Escobar (2018a) explains that pluriversality is "an ethical and political practice of alterity that involves a deep concern for social justice, the radical equality of all beings, and nonhierarchy. It's about the difference that marginalized and subaltern groups have to live with day in and day out, and that only privileged groups can afford to overlook as they act as if the entire world were, or should be, as they see it" (p. xvi). To care about the pluriverse is to work toward giving all worlds a future where they can exist peacefully. Rather than trying to create a single "best" world, caring about the pluriverse involves allowing for the possibility of multiple worlds with equal validity and opportunity.

Pluriversality is about caring for and valuing difference.

FROM
"My way or the highway."

TOWARD
"We inhabit different worlds, none of which is more legitimate than any other."

3.1 PLURIVERSALITY PRINCIPLE

Treat difference positively instead of trying to get everyone to agree on one vision.

People have different ways of being in the world, different everyday practices, and different understandings of what they want the future to look like. As designers facilitating transition, we do not need to get everyone to agree on a common future or pathway to get there, as long as the envisioned futures do not foreclose the possibilities of other preferable futures.

Embracing difference is needed for pluriversal visions, and draws inspiration from the concept of ethical relationality, which "is an ecological understanding of human relationality that does not deny difference, but rather seeks to more deeply understand how our different histories and experiences position us in relation to each other. This form of relationality is ethical because it does not overlook or invisibilize the particular historical, cultural, and social contexts from which a particular person understands and experiences living in the world. It puts these considerations at the forefront of engagements across frontiers of difference" (Donald, 2009).

Why is it important to consider difference? Because the world we want is a pluriversal one and we can only get there through pluriversal means.

VALUE 2 SHIFTING HOW WE THINK ABOUT RELATIONS

Interdependence

Interdependence might be seen as the understanding of how independent objects or beings are not isolated but always in interaction. A stronger definition, sometimes referred to as radical interdependence, understands the term as a shift from "considering things in interaction to considering things as mutually constituted, that is, viewing things as existing at all only due to their dependence on other things" (Sharma, 2015, p. 2). A mindset of interdependence is, perhaps obviously, in opposition to a mindset of independence. Rather than viewing the success or well-being of any individual, project, initiative, place, being, etc. as independent or even in competition with others, an interdependent mindset views success and well-being as something co-created, constituted by the success and well-being of a whole network of relations.

Interdependence is about caring for and valuing relations.

FROM

"I am my only concern. My well-being, my success is mine alone."

TOWARD

"Everything is connected and I am only as well-off as the world around me."

3.2 INTERDEPENDENCE PRINCIPLE

Consider layers of impact deeply instead of looking only to those immediately affected.

Caring about interdependence involves considering the well-being, involvement, and contribution of everything that designs alongside us. It means understanding how any work we do will have a ripple effect at multiple levels. Designing from a perspective where we view things and people as distinct and independent may or may not mean that we consider how our work impacts others. Designing with interdependence in mind seeks means understanding not only how our designs might affect those near to a project but also what they might mean for other species, for the planet, for the true network of interactions that make up our world.

When we design with interdependence in mind, we situate our work systemically and care for the network of connections in which it is embedded.

VALUE 3 SHIFTING HOW WE THINK ABOUT THE FUTURE

Sustainability

FROM

"The future will sort itself out; it is success now that matters."

TOWARD

"I care about the future as much as I do about today."

Sustainability is about living today in a way that does not compromise the ability of future generations and other life to flourish.

Though sustainability is often strongly tied to the natural environment, the needs of present and of future generations extend beyond environmental needs to economic, social, and cultural needs. A sustainability mindset emphasizes orienting all of these needs toward long-term flourishing. The world we want involves a shift from viewing the future as something that does not require care to viewing the future from a perspective of long-term sustainability.

Sustainability is about caring for and valuing the future.

3.3   SUSTAINABILITY PRINCIPLE

Consider influence into the far future instead of orienting definitions of success around immediate effects.

Using sustainability as a guiding principle involves an ongoing consideration of all of the ways that current actions and decisions impact the future. To design for sustainability means considering the environmental, social, and economic implications of work as metrics of success. It entails a mindset focused not only on a project's immediate outcomes but on consequences for the far future.

The principles.

PRINCIPLES BASED ON THE UNIQUE QUALITIES OF TRANSITION

1. **COMPLEXITY**

2. **ONGOINGNESS**

3. **VALUES-BASED**

PRINCIPLES BASED ON THE TRANSITION WE WANT

3.1 **PLURIVERSALITY**

3.2 **INTERDEPENDENCE**

3.3 **SUSTAINABILITY**

Understand and work with context instead of treating the future as a blank slate.

Focus on the process instead of the end vision.
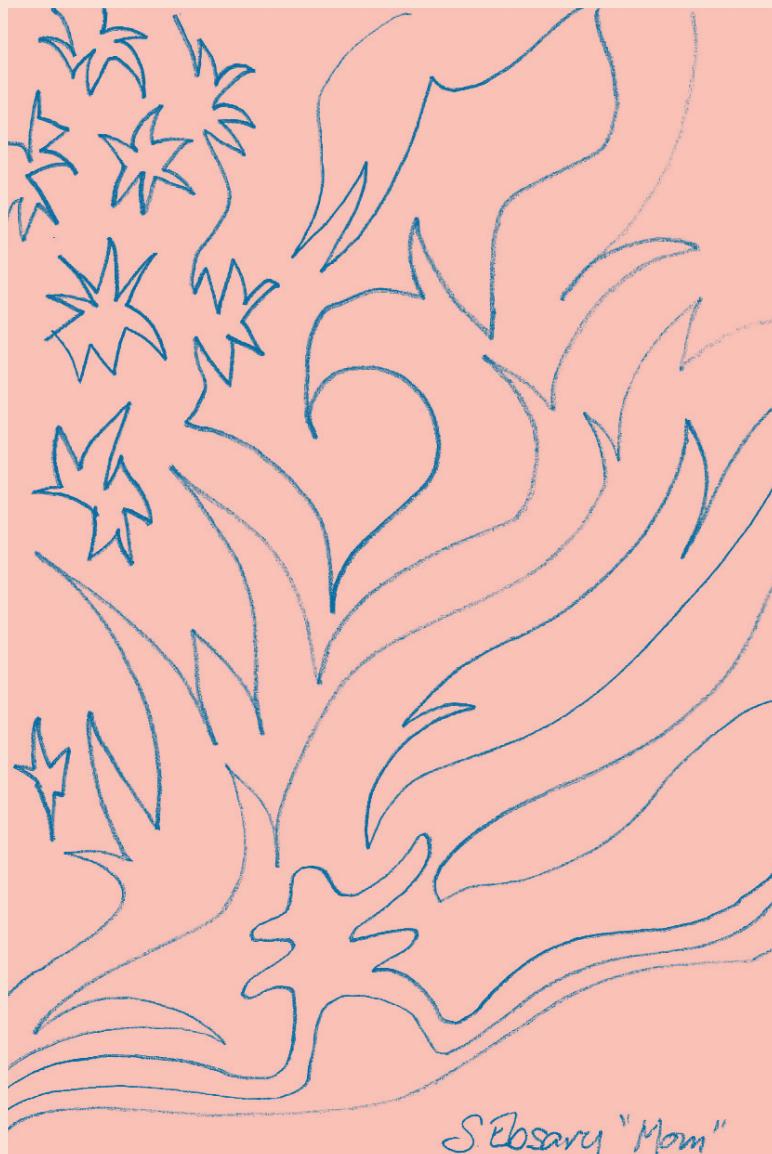
Design in a way that aligns with the values of the world being transitioned toward.

Treat difference positively instead of trying to get everyone to agree on one vision.

Consider layers of impact deeply instead of looking only to those immediately affected.

Consider influence into the far future instead of orienting definitions of success around immediate effects.

5.

S Elosary "Mom"

Our Principles in Action

The next phase of our project involved testing our principles in action. We worked with an environmental organization to help them explore the possibilities for a sustainability-focused innovation hub in the Canadian North. Through this experience, we were able to design an engagement according to our principles. In this section we outline this case study and our reflections from the process.

Innovation at the Northern Centre for Sustainability

One day in February 2019, we received a call from an environmental non-profit in Yellowknife, the capital of the Northwest Territories. The organization, Ecology North, had been working on a proposal to build the first carbon-negative building[5] in Canada, developed in partnership with the local Indigenous community, the Yellowknives Dene First Nation. The proposed building, the Northern Centre for Sustainability (NCFS), would serve as a living demonstration of northern green building practices and house an innovation centre bringing together sustainability-oriented organizations and individuals to advance sustainability in Yellowknife and beyond.

Ecology North hired us as design researchers to help them frame what innovation might look like at the NCFS and how it could participate in transforming communities in Yellowknife and throughout the North.

5. A carbon-negative building has a positive carbon footprint: it does not contribute carbon dioxide to the atmosphere but removes it.

We spent a few weeks preparing in Toronto for our trip up North, and in late February, three short weeks after our first phone call, we found ourselves at the Ecology North offices in snowy Yellowknife. We spent one week in Yellowknife conducting primary research using processes informed by our principles developed for transition designing. After that, we had a few weeks in Toronto to put together a report for Ecology North. In parallel with this report, we reflected on our process using principles-based design.
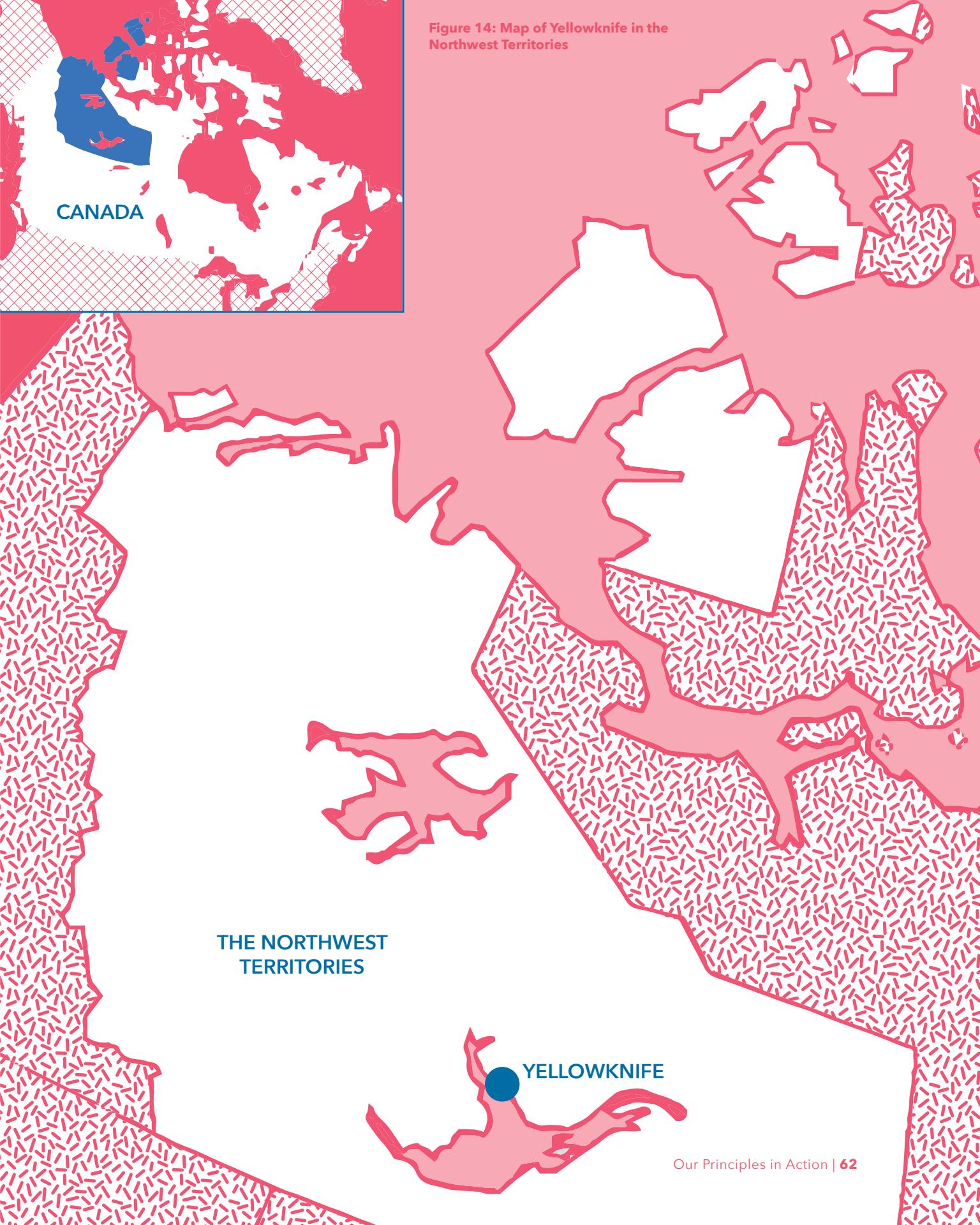
Image 1: Tara and Ariana at Pilot's Monument in Yellowknife

Image 2: Tara in Yellowkniife

CANADA

THE NORTHWEST TERRITORIES

YELLOWKNIFE

What we did

We developed a set of research questions separate from those of our MRP for our project with Ecology North. To frame innovation for sustainability within the context of Yellowknife and the Northwest Territories and understand what it might look like within the proposed NCFS, we oriented our research around the following lines of inquiry:

RESEARCH QUESTION

How might a dedicated innovation space in Yellowknife foster sustainable northern ways of living?

SUB-QUESTIONS

- What does sustainable innovation mean to Yellowknife and the Northwest Territories?

- What current challenges could innovation for sustainability address in Yellowknife and the Northwest Territories?

- What existing strengths provide opportunities for innovation?

- What might happen at the Northern Centre for Sustainability to encourage innovation?

Our process

Our process involved background research before heading to Yellowknife, interviews with various community members and organizations, and a public co-design workshop. The combination of these methods allowed us to understand the project contextually and involve the community in the process. The actual shape of our engagements, however, did not take form until we were in Yellowknife. We were comfortable improvising because our process was scaffolded by the principles we set out beforehand, and we wanted our methods to be specific to the research as it developed on the ground.

Methods

Background research

We spent a few weeks conducting background research to better understand the concepts of sustainability and innovation in the context of Yellowknife and the Northwest Territories. We reviewed models of innovation hubs from elsewhere from which we might draw best practices. We read about place-specific priorities in documents from the City of Yellowknife, the Government of the Northwest Territories, the Canadian Northern Economic Development Agency, and the Yellowknives Dene First Nation. We tried to learn as much as we could about the history of Yellowknife and the Northwest Territories, and we conducted some initial scoping interviews with Ecology North to learn more about the project development.

Interviews
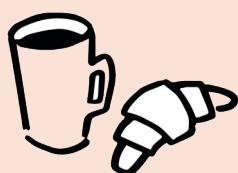
During our primary research phase in Yellowknife, we conducted ten interviews with representatives from Ecology North, the City of Yellowknife, the Government of the Northwest Territories, private businesses, the Yellowknives Dene First Nation, and the community. The purpose of these interviews was to understand innovation within the specific context of Yellowknife and the Northwest Territories and to inform the design of our workshop.

Workshop
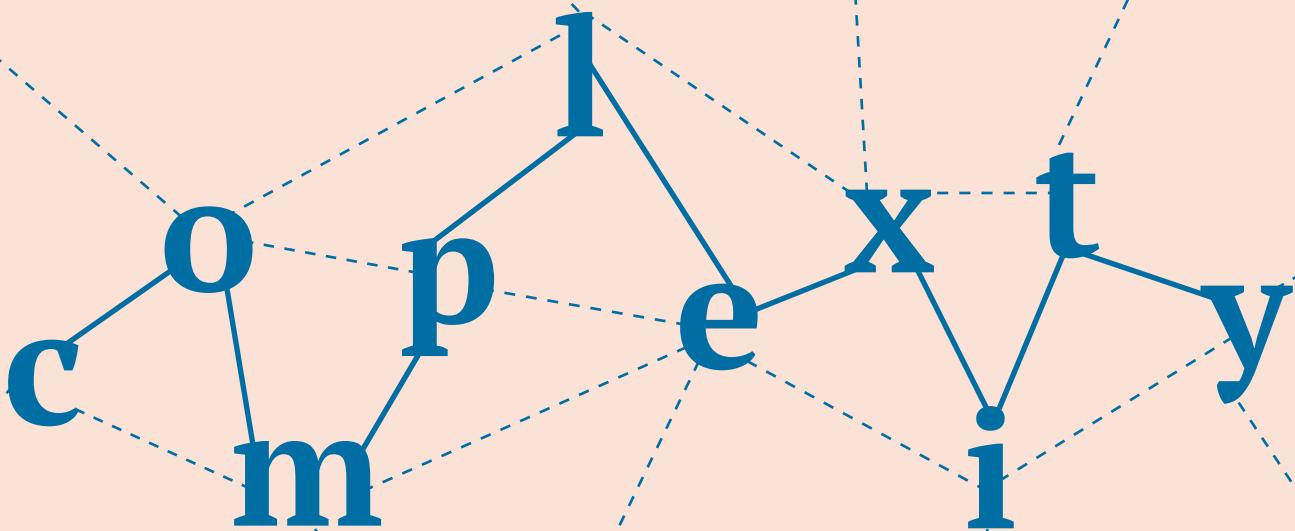
Our primary research culminated in a co-design workshop with 20 participants recruited through our interviewees, word-of-mouth, public posters, and Ecology North's circulation channels. Our participants collectively imagineed which innovation models, activities, and practices at the NCFS would bring the greatest value to communities in Yellowknife and the Northwest Territories. We facilitated a series of activities that we used to develop a detailed concept for what innovation might look like at the NCFS.

Hanging out

We also consider the time we spent in Yellowknife not "officially" working as part of our research. By intentionally treating our time hanging out as research, we were able to acquire a better understanding of the context and community in which we were working than we would have through solely more formal methods. To encourage conversations, we spent a lot of our time outdoors and in public settings wearing stickers that invited people to come talk to us about innovation.

complexity

Understand and work with context instead of treating the future as a blank slate.

THE COMPLEXITY PRINCIPLE

Understand and work with context instead of treating the future as a blank slate.

MAKING IT ACTIONABLE

- Contexts are too complex to understand alone: co-create your understanding of context.

- There is more to context than meets the eye: discover contexts through informal interaction.

- Your understanding of context evolves as you design: leave room for emergence.

- Contexts constrain possibilities: build on what is already there, already in motion.

FOLLOWING OUR PRINCIPLE

Co-create your understanding of context.

Our secondary research to understand the history, people, place, and project could only take our understanding of context so far. Conducting interviews in Yellowknife with a diverse range of community members and organizations allowed us to learn how concepts like innovation and sustainability look different in this specific context from the community. The insights into needs, challenges, and strengths provided us with a much broader and deeper understanding than we could ever have gained on our own.

Image 3: Hanging out
Ariana out in Yellownife wearing a sticker inviting informal chats

Discover contexts through informal interaction.

We developed an understanding of the innovation context in Yellowknife and the Northwest Territories through secondary research and formal methods like interviews. Yet these methods often leave out elements of context that people are either less willing to communicate or may not think to communicate. We intentionally approached our informal and casual time in the community as a way to do lived,

informal research. We even created "Hi, I'm in Yellowknife to chat about innovation. Come say hi!" stickers that we wore when we were out and about to encourage this type of interaction. Through this intentionality, our understanding of context was made much more nuanced and comprehensive.

There is also a lot to learn about context by spending time embedded within it. We spent time at cafes, going to cultural events, and hanging out with community members. These were not ways to answer specific lines of inquiry, but activities that helped us do the important work of getting to know a place.

Build on what is already there, already in motion.

Our community co-design workshop was developed based on context-specific insights from interviews and research. We designed a card game activity to guide participants in generating scenarios of what might happen at a Northern Centre for Sustainability. Cards were organized into three categories populated by findings from earlier research:

- potential innovation models: activities, programs, partnerships, or resources that could encourage innovation at the NCFS

- challenges: challenges or community needs the NCFS innovation hub could help address

- superpowers: unique strengths of the community to be leveraged in the development and maintenance of the NCFS innovation hub

Image 4 ▼
NCFS scenario card game

Leave room for emergence.

We imbued our own design process with a sensitivity to emergence. We trusted that by having strong foundational principles we could take a more unstructured, improvisational research approach. Though we did a lot of work to prepare and inform ourselves, we were comfortable arriving in Yellowknife with only a loose plan of what our final workshop and time there would look like, listening for and working with our new understanding of context to create a more emergent research engagement.

▼ **Image 5, 6: Cards with context**
Context cards used to build scenarios for the NCFS and presented by each group

More time (and trust) is better

It can be difficult to establish the trust and relationships needed for certain communities to feel safe and comfortable sharing their knowledge and experience. This trust comes with the time needed to develop a deep and nuanced understanding of context and was a challenge for us as researchers from outside the community with only a short-term engagement.

Specifics help

Our own prioritization of contextual specifics ultimately made our co-design workshop quite effective because it allowed participants to easily engage with and feel inspired by the materials.

Ongoingness

PRINCIPLE 2

Focus on the process instead of the end vision.

THE ONGOINGNESS PRINCIPLE
Focus on the process instead of the end vision.

MAKING IT ACTIONABLE

- Transition requires ongoing engagement: build commitment by strengthening partnerships and relationships.

- Thinking ongoingly means thinking openly: do not let the need for a concrete outcome obscure the value of exploring possibilities.

FOLLOWING OUR PRINCIPLE

Build commitment by strengthening partnerships and relationships.

We prioritized forming and strengthening partnerships and relationships between the community and the project to encourage ongoing commitment to the project. We took it upon ourselves to identify who outside of Ecology North might be able to champion the NCFS project beyond our engagement. This meant travelling to peoples' homes, inviting people for coffee, and carefully recruiting for and orchestrating our co-design workshop. We spent time identifying which voices needed to be included in the ongoing project development and tried to connect and involve representatives of those communities.

Do not let the need for a concrete outcome obscure the value of exploring possibilities.

We designed our workshop to emphasize building participants' capacities to collectively imagine a valuable space. A more traditional approach to workshop design might have been oriented toward producing a specific idea of what exactly the NCFS would look like and do. Instead, we encouraged creative, outside-the-box brainstorming and development of many scenarios. Though a unified plan for the NCFS will have to be determined eventually, at this visioning phase, we felt that emphasizing convergence would obscure feedback from the community that could help us understand what would bring the most value. We hoped this prioritization of exploring possibilities alongside immediate actions would make the community more successful at managing and working toward what is likely to be a long-term, changing project.

Image 7: Co-design brainstorming
Participants brainstorm creative possibilities for the NCFS during the co-design workshop

REFLECTIONS

Exploration is often uncomfortable.

Within our workshop and interviews, we found that some participants struggled with a process that was not oriented around a concrete outcome. We were emphasizing capacity-building, collective imagining, and guidelines that could inform ongoing work. Yet, for some participants, ambiguity and uncertainty was uncomfortable. Even though we were comfortable leaning into process rather than trying to reach an end vision, we could have been better equipped to frame our process in a way that felt useful and concrete to participants not naturally inclined toward uncertainty.

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Recognize and welcome difference instead of working toward agreement on a single vision.

Pluriversality
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THE PLURIVERSALITY PRINCIPLE

Recognize and welcome difference instead of working toward agreement on a single vision.

MAKING IT ACTIONABLE

- We want a world in which everyone has a say about the future: consider everyone involved in and impacted by your work, and employ a variety of engagement strategies.

- People have different ways of communicating their ideas about the future: use inclusive methods.

FOLLOWING OUR PRINCIPLE

Consider everyone involved in and impacted by your work, and employ a variety of engagement strategies.

Yellowknife is situated in a place with diverse histories, cultures, and backgrounds. We began our project seeking to understand and include as many perspectives, voices, and stories as possible. We worked to engage the broadest range of people that we could, from community members and small business owners, to government workers and Indigenous leaders.

Recognizing that people are drawn to participate in things for different reasons, we developed community interest in our research through a variety of engagement and recruitment strategies. We had Ecology North reach out to people who might have been more receptive to formal invitations to participate. We used snowball recruitment to leverage existing networks and reach people with a social commitment to the NCFS. We put up posters in a variety of public places and posted on relevant social media to reach participants who were less intimately tied to the project.

Use inclusive methods.

Our final workshop was designed so that while groups were working collaboratively, participants could contribute their own thoughts and insights in individual participant workbooks to accomadate any discomfort sharing in a group. Facilitators were trained to encourage contributions from everyone involved in their group and make sure the proposed scenarios were representative of different perspectives.

We also tried to use a diverse set of research methods to make participating in our process as inclusive as possible, mixing more formal group methods like a workshop with individual interviews and informal discussions while we were out in the city.

Image 9: Workbooks
Individual workbooks for our co-design workshop

Go beyond welcoming difference to intentionally seeking difference.

Like understanding context, the principle of welcoming difference is more successful with more time. Without intentionally seeking out difference, what often emerges in these types of processes are the dominant voices and perspective. Our short time in Yellowknife meant that we could only schedule a limited amount of interviews, that we were not able to train our facilitators to the extent that we would have liked, and that we could not spend as much time as we would have liked recruiting. We also found that as outsiders coming into the community, we needed time to understand measures that should have been taken to be truly inclusive and to establish the trust needed for some people to accept our invitation to participate.

Image 10: Workshop poster ▸
An invitation to our co-design workshop on the bulletin board of a local shop

Interdependence

PRINCIPLE 3.2

Consider layers of impact deeply instead of looking only to those immediately affected.

THE INTERDEPENDENCE PRINCIPLE

Consider layers of impact deeply instead of looking only to those immediately affected.

MAKING IT ACTIONABLE

- Transition requires collaboration: identify shared elements of a desired future.

- Building a connected future means creating value for everyone: encourage people to situate their own needs and values within a bigger picture.

FOLLOWING OUR PRINCIPLE

Identify shared elements of a desired future.

It is not necessarily natural or easy for people to think interdependently. In a diverse community like Yellowknife, there are groups who have legitimate concerns about privacy and ownership, about power and who will be prioritized in a space, about who will get to define how a space is used. Our co-design workshop was one of the main ways we attempted to encourage more interconnected mindsets. People from different government offices, private business owners, non-profits, educators, and community members discussed a topic together that might affect all of their futures. Everyone had different needs, but our participants were able to discover ways in which their concerns might not actually be in conflict with each other but might be addressed in ways that are mutually beneficial.

Encourage people to situate their own needs and values within a bigger picture.

People came in with their own ideas or projections for the NCFS, but the card game encouraged them to frame these ideas within the context of providing value to others. The ideas that each group ultimately put forward had to demonstrably meet community needs and build upon community strengths. Further, building a scenario in a group necessitated that each participant allow their own ideas to be shaped by others. When the groups pitched their final scenarios to each other, they were once again presented by what others in their community considered urgent and valuable.
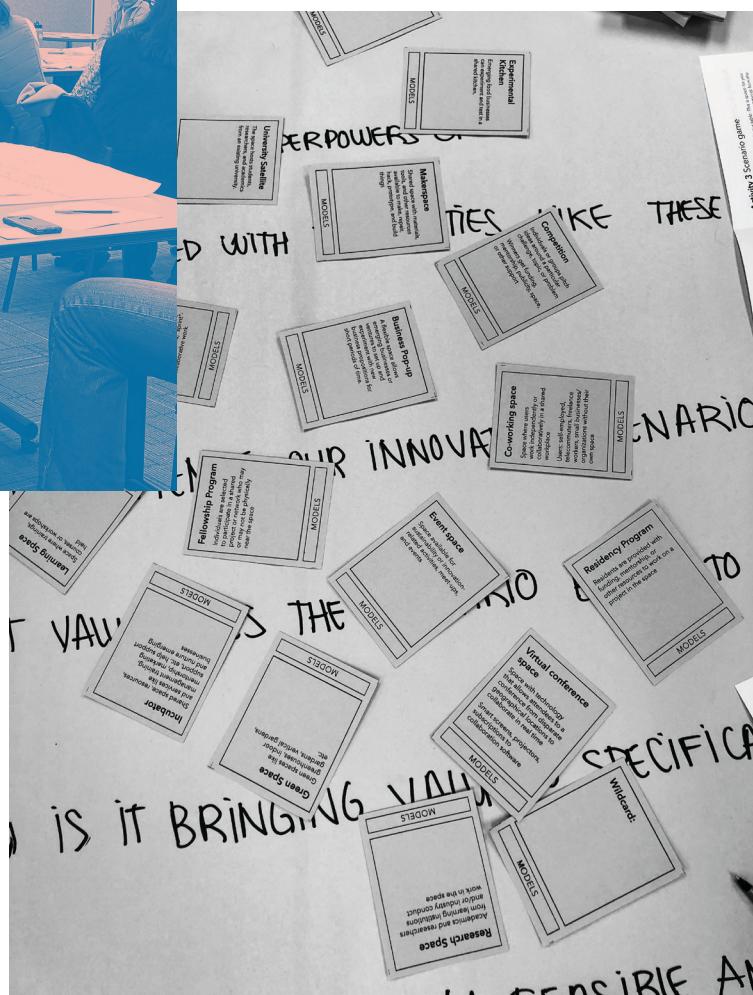
▲ **Image 11: Shared values**
Participants work together to find shared value in a future NCFS

▼ **Image 12: Community values**
Cards present community values that participants can explore and address with their scenarios

▲ **Image 13: Shared visions**
Participants shape a shared vision for a sustainable, innovative future.

A mindset of interconnectedness can and should move beyond a project.

Because we were focusing specifically on what might happen at the NCFS, we did not spend much time in our workshop exploring what the world might look like around a future NCFS. Being more explicit about imagining a future that allows for the shared needs and interests of participants beyond the NCFS might have allowed us to build a deeper understanding of interdependence within the community.

We can create value but we can also destroy it.

Though it was useful to understand what value means and for whom, it is also important to understand where value is not being created, or where it is being destroyed. To understand potential challenges and barriers, we could have spent more time critically discussing who and what might be negatively affected by the proposed NCFS.

Sustainability

Consider influence into the far future instead of orienting definitions of success around immediate effects.

THE SUSTAINABILITY PRINCIPLE

Consider influence into the far future instead of orienting definitions of success around immediate effects.

MAKING IT ACTIONABLE

- Sustainability is more than a buzzword: broaden your understanding of sustainability.

- Transition requires orienting present action toward the long-term: build capacities for thinking about the future.

FOLLOWING OUR PRINCIPLE

Broaden your understanding of sustainability.

This principle was perhaps the most straightforward to design with since the Northern Centre for Sustainability as a concept lends itself to easily incorporating sustainability. Our main focus for this was to consider the project not as a single engagement but as a project that would, no matter what, have profound impacts into the future of Yellowknife, the NWT, and possibly much further. We used probing interview questions and workshop prompts that asked participants to consider not just the NCFS but the futures they want for their communities and the world. We posed questions that consider the NCFS in a long-term way: what does a long-term future mean for operating and maintaining the space? How could we ensure that the space is flexible enough that it will stay relevant and useful? What could the building and the activities within it mean for future generations?

Build capacities for thinking about the future.

We also oriented parts of our interviews and workshop around building peoples' capacities for thinking about the future. Thinking sustainably involves a recognition of how every decision and action in the present has implications for the long-term future. Rather than focusing only on the needs of the present engagement, we asked questions and conducted activities to help the Yellowknife community begin thinking about the NCFS within these long-term needs. In our interviews, we posed questions that prompted people to consider what a desirable future for themselves and their communities might look like and how the NCFS might fit into that future. In our workshop, one activity asked participants to demonstrate their feelings of optimism and control in shaping the future of their communities. Framing the project in the context of a long-term future required people to begin thinking explicitly about the types of futures they would like to contribute to.

▼ **Image 14: Thinking to the future**
Participants stand up to demonstrate their optimism and feelings of control over the future of their community.

Sustainability is a distracting term.

The word sustainability is so commonly defined in a particular way, it can be difficult to expand the conversation. It was our challenge and responsibility as designers to understand that even though the NCFS prioritizes environmental sustainability, it needs to consider sustainability more comprehensively.

Long-term concerns are not prioritized.

It can be difficult to orient a project toward the long-term because immediate value is so often sought after and rewarded. Projects still need to grapple with the very real needs of the present and are obligated to satisfy the parties involved. This is a tension we have yet to resolve.

PART III

Reflectin

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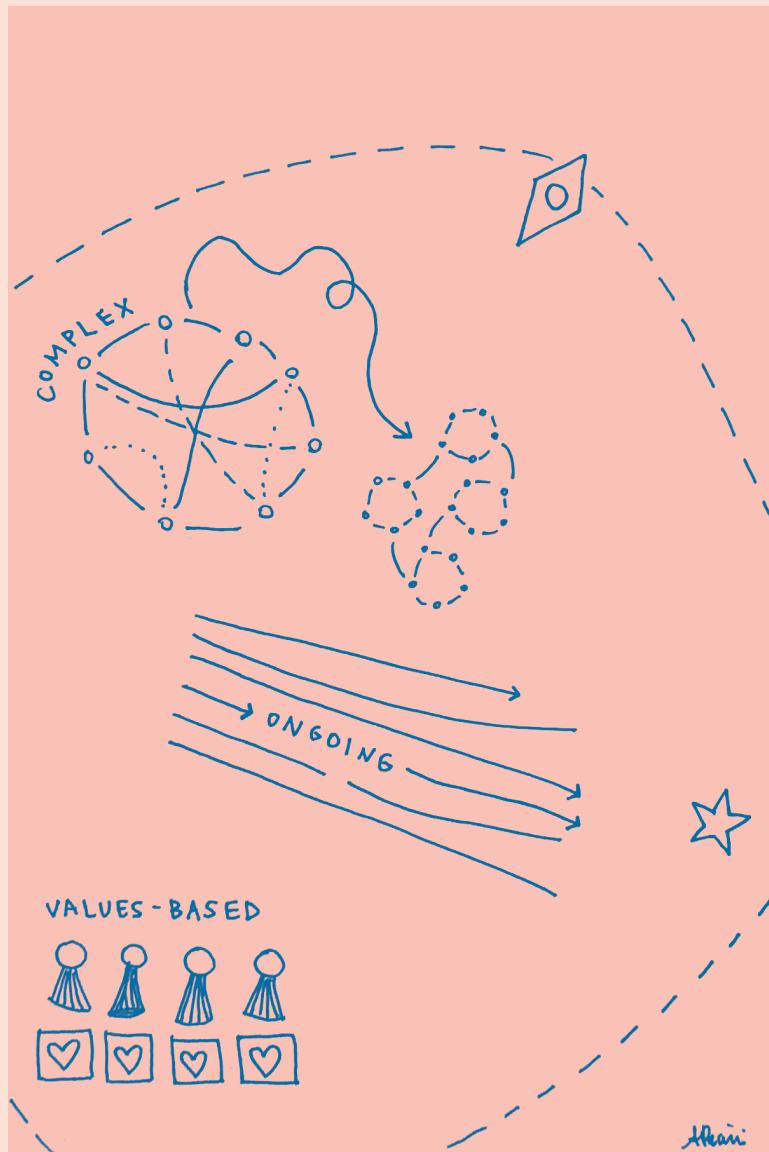
6.

Discussion

We can situate the Northern Centre for Sustainability within a larger narrative of how it might contribute to community transitions in Yellowknife and other northern communities. Ecology North shared many of our values of what a different future might look like. This allowed us to frame our project with them as participating in a transition to a sustainable, relational, pluriversal future.

What did we learn about principles-based design?

As part of our research on designing for transitions, we had the opportunity to consult on Ecology North's proposed Northern Centre for Sustainability. This engagement allowed us to use our principles in practice and, at the same time, advance an initiative aligned with the transition we are working toward. From this experience, we were able to reflect on our design practice and on the broader ideas of designing for transition.

Principles are reductionist but make complexity more manageable.

Developing principles is a useful way of guiding action in complex situations. Principles simplify and organize the messiness inherent in transition projects. This can help us feel more comfortable in complexity. It also makes principles an effective way to communicate ideas. As transition is often highly collaborative and multi-disciplinary work, principles allow for alignment, understanding, and sharing knowledge amongst those collectively working on transition projects.

Yet, simplifying complexity removes some of the nuance and complication that should be considered in transition. In some ways, principles are too neat of a response to the complexity of transition. Having a list of principles to consult while designing can make it feel like everything has been considered when consideration must be ongoing.

Developing principles separates quite interrelated and entangled concepts into distinct points. Though viewing our principles as distinct helped us organize our ideas and keep track of the things that were important to us, in many ways the delineations were arbitrary. All of our principles emerged from a set of complicated, entangled ideas and values that even when separated out contained elements of each other.

Transition requires reframing how we think about principles.

Our research and our thinking evolved over the course of this MRP. We began by organizing our thoughts about designing for transition into a set of principles. Yet the harder we worked to fit our thinking into a set of principles, the more challenging it seemed. There was no language that felt appropriate to express the core of our ideas, no clear way we could articulate how we saw some of our values in action, and no easy rule for why we felt an idea should fall into one principle and not another. Eventually, the realization emerged that maybe a set of principles was not the outcome we were striving for afterall. Any set of principles we were able to compile for this report could be useful for ourselves and the communication of our thinking to others, but could only ever be a snapshot in time of the way we are thinking about transition at this moment.

By focusing on the process and an ongoing conversation about principles rather than trying to determine a hard set of principles, we can avoid the trap of feeling we "found" our principles. To have arrived at a final, complete set of principles would mean that we were no longer practicing with the ongoing mindset required for transition. Being process-oriented about transition requires an openness and desire to see how the same principles we have arrived at now might very well have to evolve the next time we design. We are not committed to the principles themselves but to continuing to evaluate and discuss them.

Perhaps the most important principle in principles-based transition designing is to commit to an ongoing, caring conversation about what is informing the work you are doing. Striving for an articulated set of principles was our way of designing together, a way to guide ourselves and our process intentionally toward the type of world we want. Principles-based design for transition is about beginning and maintaining this kind of dialogue about reflective practice, and how the ways we practice matter in transition.

We need a better approach than principles-based design.

Developing principles for transition involves making choices about what values are prioritized in the design process. The idea of principles-based designing, however, does not actually align with the value shifts we have discussed for the transition we want. Principles are inherently universalizing, not pluriversal, choosing some values or qualities above others. Organizing our thoughts into principles reflects independence, not how principles stem from entangled ideas; they are interdependent. And, principles as they have been traditionally defined are not sustainable; they are about making a decision about what guides us now and using that fixed idea to prescribe how we act in the future.

We want a world that is pluriversal, interdependent, and sustainable, and we want to design in a way that is pluriversal, interdependent, and sustainable. Though we may not know what a design approach that embodies all of those qualities looks like, using principles-based design as a way to encourage reflective conversations may be a start.

Really, it is all about reflective practice.

At this moment, we feel that principles are useful tools for guiding design practices for transition because they help make the complexity of transition-oriented projects manageable. Further, for designers like us just starting to develop a practice, or those new to designing for transition, principles provide a framework for improvisation. Using principles within the transition context, however, requires designers to think carefully and critically about what principles mean. Principles are not sufficient ways to understand and account for complexity. Principles are not static, fixed guidelines but ways to orient an ongoing reflective practice.

Designing for transition is about working to create a different world while also cultivating a practice of reflection in how you work toward it. Designing for transition as we see it is not a process that happens once and then is updated and iterated upon. Designing for transition is the process of iteration. It is a continuous, ongoing reflective practice of making change. Developing principles is one way to help make this complex, changing process communicable, translatable, and evaluable. Principle development allows you to design in a directed way while leaving room for emergence and uncertainty. Recognizing both the strengths and limitations of principles-based designing for transition, we will continue to explore them as a way of designing.

This reflection on the effectiveness of principles applies to how we have felt about many elements of this research process. The topics we have chosen are defined by their complexity, nuance, and ongoingness; while trying to put them on paper might capture how we are thinking at this point in time and, we hope, communicate some of this to curious others, a medium like this is always somehow inadequate and incomplete. But, until we find alternative media and practices of translation, we will make the best use we can of the tools we have.

7.

Conclusion

We are far from finished exploring the questions that emerged through our research, but for now, for this report, we will try to wrap up.

Our contribution

We wanted to understand how theoretical notions of designing for transition might apply in practice. We set out to dwell in this space between design theory and design practice, and offer some thoughts on how we have translated our reflections on theory into design actions.

In our collaborative research around these ideas, we kept returning to key themes about how design needs to be practiced differently in the context of transition. Establishing principles around these recurrent themes became a way to organize our thoughts and hold ourselves accountable to what we valued. These principles structured our design practice in a way that aligned with the future we want, while still giving us the freedom to stay in the emergent process of transitioning. We got to apply and evaluate our principles in action through a design consulting engagement in Yellowknife.

The ultimate contribution of our research is an exploration of principles-based designing and what it might offer for transition. We have proposed principles-based designing as a method for intentionally incorporating the unique qualities of transition into design practices.

We set out to answer:
How might the unique qualities of transition be translated into principles that orient design practices toward desirable futures?

Through our ongoing inquiry into our own practice, we have arrived at a few ideas with which we would like to conclude this report.

Principles-based design: the good, the bad, and the messy

Designing for transition is a way to intentionally, consciously guide change toward desired worlds. For an ongoing, complex, value-based project like transition, continuously developing and evaluating principles is a useful way to structure design practice without overdetermining it. Reflecting on our experience with principles-based transition design, we found that:

- **Principles are reductionist but make complexity more manageable.**

   Developing principles is a way of reducing, organizing, and feeling comfortable with complexity. This makes principles an incomplete, imperfect way of orienting transition design, yet it also makes principles an effective way to communicate ideas that are otherwise too complex.

- **Transition requires reframing how we think about principles.**

   When discussing principles in the context of transition, it is important to emphasize that the focus is not on the principles themselves but on maintaining an ongoing conversation about how values inform one's work.

- **We need a better approach than principles-based design.**

   Principles-based design does not entirely align with the qualities of the world we hope to transition toward. Using principles-based design as a way to hold reflective conversations, however, may be a start. Ultimately, the ways in which we design matter for transition. Principles-based designing is a way of paying attention to our own ways of practicing.

Taking a transitional approach to transition

Transition is the effort to intentionally orient change toward a desired future. Importantly, the emphasis here is the *orientation* toward a particular future, not the particular future itself. As designers with our own vision of the future we want, we wanted to understand how we might orient our own work toward this future. We found that practicing for transition involves finding ways to ensure actions are continuously reoriented toward a desirable future. It requires an understanding that transition emerges through the process of working toward it; it is defined not by a given outcome or goal but by how visions shape work in an ongoing way. We are arguing for designers to take a *transitional approach to transition*.

A transitional approach to transition recognizes that the process of how we move toward a future matters as much as the futures we desire. The way we work toward desirable futures matters. The way we transition matters. The way we design for transition matters.

Designing with care

Transition projects aim to create different worlds. The futures we create have dramatic implications for those who will live in them. Design is about choice, and designing for transition entails making choices about the worlds and futures we work toward. These choices mean that not only does design have the power to shape the type of worlds that become possible but that it also makes certain options and certain types of worlds and futures less possible (Fry, 2009). Those who are working toward transition have a responsibility to be reflective, critical, and explicit about the futures they are working to create. We are advocating for designing for transition with care. Caring about our design practice means not only caring about *what* we design, but *how* we design too.

Future Work

We plan to continue working on transition-related projects beyond this research, continuing our design engagements with an attitude of collaborative, careful practice. There is a lot left to explore, and we hope we will find more to say about our principled, evolving practice as we continue to refine and reflect upon it.

Limitations

We could spend many more years and write many more pages working on the questions we have posed throughout this research. But, as a project constrained by time and resources, we had to impose boundaries and limit our scope of inquiry. Our findings should be interpreted with these limitations in mind:

Just us

We used ourselves as our case study and point of reflection. We could expand our thinking if we gathered insights from the processes of other designers working for transition.

One reflective loop

With a limited period of time, we completed only one loop of our reflective practice cycle. In a longer design engagement, we could iterate on and reevaluate our practice.

One engagement

We were only able to employ our principles in a singular design engagement. This engagement dealt with a unique situation and unique challenges, constraints, opportunities, and actors. We were only able to reflect on our principles in that context, and though we have tried to extrapolate broader implications, our evaluations could only improve from further engagements.

For example, almost everyone we spoke to or engaged in our project was on board with the vision of the Northern Centre for Sustainability. Our process would have had to deal with difference quite differently if we had involved people who were opposed or whose needs were in greater conflict. How would our principles have helped us address this? We also did not have to make actionable decisions about the future of the NCFS; how would a principle de-emphasizing a single vision help us then? We tried to leave room for flexibility and adaptability in

the possible futures of the NCFS that we proposed, but we recognize that there is not always an opportunity to do that. We may be asked to design for a project that does not allow us that room, and how do we follow our principles in a situation like that? Will we have to evolve our principles? How will we make decisions about when we will need deviate from our principles?

Open Tensions

Transitioning is complicated, and, at times, full of tensions and seeming contradictions. Transition is about working toward an always uncertain future. Because of this, thinking about transition involves learning to be comfortable with uncertainty and sitting with this tension. We acknowledge that there are many tensions raised by designing for transition that we have not necessarily provided a satisfactory way to "think through." Here we go over some of the tensions we encountered, some unresolved questions we asked ourselves while undertaking this research:

Short-term vs. long-term

WHAT DOES IT LOOK LIKE TO TAKE IMMEDIATE ACTION WHILE ORIENTING TOWARD THE LONG-TERM?

In our introduction, we referenced Donna Haraway's (2016) call to consider and act on current crises with an attitude of urgency instead of emergency. We wrote that urgency, as we interpret it, is an understanding that action does need to be taken immediately, that particular responses and work are needed right now, even if these actions will take decades or even centuries to shift toward different worlds. Rather than motivating by panic or desperation as emergency does, urgency motivates by importance. This sensitivity to time and need for immediate action sits in contrast to the long-term orientation of transition. What does it mean to recognize both that certain fundamental shifts may take decades or centuries and that actions need to be taken right now? How can we as designers argue for long-term orientation when the needs of the present are so urgent and dramatic? Sitting between unrealistic, utopian ideas of the future and despairing that nothing can be done requires intentionally sitting in this tension, or staying with the trouble (Haraway, 2016).

Local vs. global

WHAT IS THE APPROPRIATE SOCIAL FRAME AND SCALE FOR TRANSITION WORK?

Change at all sorts of levels, from personal decisions to vast intergovernmental projects helps transition happen. Is there a scale that is most effective? How do the projects happening at different scales interact and influence each other? Where should we be placing our efforts as designers interested in transition?

Cohesive vs. distributed

HOW MUCH COORDINATION AND SHARED THINKING IS NEEDED AMONGST THE SOCIALLY DIFFUSE ACTORS INVOLVED IN TRANSITION?

Transition emerges from many distributed actions over time, from many people and initiatives working toward overlapping futures. To effectively transition in a particular direction, how much coordination is needed between these actors to create an emergent phenomenon like transition? To what extent is coordination even possible?

Consensus vs. allowing for difference

HOW DO WE WORK TOWARD A SHARED FUTURE WITHOUT NECESSARILY AGREEING ABOUT EVERYTHING?

Worlds are social and shared, and our planet is shared amongst all of us humans and non-humans. Shifting toward alternative worlds is a shared project. How does transition happen when we humans do not necessarily agree on the worlds we want to move toward or the ways of getting there? We might look to practical approaches to encourage dialogue, like structured dialogic design (Christakis & Bausch, 2006; Laouris & Christakis, 2007) or designing for conversations (Jones, 2010).

HOW CAN WE HAVE A VISION OF PLURIVERSALITY WITHOUT IMPOSING IT AS A UNIVERSALISING PRINCIPLE?

As pluriversality calls for embracing difference, how do we work toward a pluriversal world, a world where many worlds fit,[6] without imposing pluriversality as the new universal?

Design vs. the design industry

HOW DO WE DESIGN ONGOINGLY WHEN THE DESIGN INDUSTRY IS NOT SET UP TO BE ONGOING?

In an economic system oriented toward growth and short-term success, it can be difficult for designers to orient their work toward the long-term (Boehnert, 2014). The design system is not set up for

6. A notion put forward by the Zapatistas, a decolonial, alter-globalization social movement.

designers to "stay with" projects. How do you work toward transition as a designer when you are not often not given the opportunity? We have tried to answer this for ourselves with the notion of designing for transition; by designing from our principles we can orient any of our projects toward transition. However, this leads to our next question:

HOW DO WE GET OPPORTUNITIES TO DESIGN FOR TRANSITION?
As designers, we make our living by designing for others. How do we get our employers or clients to give us space to orient our processes toward transition? How do we get people to trust us with an intentionally improvisational and not pre-defined process? How do we communicate that even short-term goals and objectives can be achieved while orienting toward the long-term?

Intentionally in tension

These tensions we have been grappling with are tensions that do not have answers. They are not tensions to resolve or try to answer but tensions to sit with. Robert Fritz (1991) describes the value of holding structural tension: the tension between the vision of a desired world and the current reality of how things are. The word tension connotes a tightness, a pulling, a stretching between these two ideas, and often involves discomfort. Yet this stretch between a vision of the future and the realities of the present creates the energy for change. It is through cultivating this tension, being intentionally in tension, that we create the impetus to move productively toward futures we want.

To conclude our musings on tension, we leave you with some advice from our dear friend Arturo Escobar, helping us think through the tension of working inside or outside "the system" (personal communication, July 7, 2018):

> **"One thought that crossed my mind was that the decision does not have to be either/or: either crafting a path intended to the greatest extent possible for the construction of a different world; or trying to transform the system from within, so to speak. It's not even a question of discussing the merits or not of either option, because the options are always entangled: there is no place in which to stand and live that is completely unconnected to the dominant world; and we always are, willy nilly, within that world (even if not only, as we try to extricate ourselves partially from it, alone and with others)."**

This is the end.
But it is also just th

We believe that transition is happening, that in this time of great, and converging change, different worlds are emerging. We are inspired by all the people working for these transitions, the people who are shaping these emerging worlds into ones we might want to inhabit. As we continue to practice as designers, we look forward to joining alongside them in this transition movement.

We see this report not as a culmination of our thinking through these ideas that is in any way complete. We see this report as a demonstration of where our thoughts sit at this juncture in what we hope to be a lifelong conversation. We plan to continue this work together, to continue to sit in the messy middle, to continue to reflect on the ways in which we design, to continue to learn what all of this means in practice. And so, this is just the beginning. But for today, it is also the end.

e beginning.

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