

Equity and Resilience:

Can Cities of the Future Achieve Both?

by Katherine Gaffigan

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Submitted to OCAD University in partial fulfillment of the requirements
for the degree of Master of Design in Strategic Foresight & Innovation

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ABSTRACT

Within the concept of city resilience lies an opportunity to transform current systems of power and oppression that perpetuate social inequities and deny basic human rights to much of the world's population. This research examines how current resilience practices, if left unchecked, might affect the future equity of a city's neighborhoods and communities by fortifying oppressive power structures and systems dominant in today's society. It questions how we might use systems thinking and foresight tools to re-engineer processes for building resilience that supports the transition to more equitable and just cities. A design research methodology was used to explore 1) what makes a future equitable; 2) the process by which we define a term, in this case, resilience; and 3) how this definition might hold power to inform how resilience is built, distributed, and regulated in the future. The methodology consists of field observation and semi-structured subject matter expert interviews while employing foresight methods, systems analysis, and generative design research techniques to facilitate multi-stakeholder engagements. Contributions of this research include recommendations on how we might re-engineer foundational processes for building definitions of resilience that consider equity and support the building and repairing of a just city. Additionally, this study introduces a conceptual tool, Dream Capital, for adapting and designing more equitable approaches to building resilience that can aid cities in overcoming social, political, economic, and cultural inequities in the future.

LAND ACKNOWLEDGMENT

In the United States neither the history of the Land nor the historical stewards and caretakers of it are acknowledged.

As an expatriate of the United States, I would like to acknowledge the ancestral and traditional territories of the Mississaugas of the Credit, the Haudenosaunee Confederacy of Six Nations, the Anishinaabe and the Huron-Wendat nations, who are the original caretakers of the land on which, for the past three years, I have stood, lived, and received an education.

I would like to give thanks and admiration to those nations who have lived on and protected this territory prior to and against colonization, and also acknowledge and give thanks to those nations who have lived here since time immemorial on whose territory I now live and thrive.

Toronto is in the Dish With One Spoon Territory. The Dish With One Spoon is a treaty between the Anishinaabe, Mississaugas and Haudenosaunee Confederacy of Six Nations that binds these nations to share the wealth of the territory and protect the land. Subsequent Indigenous Nations, Europeans and all newcomers have been invited into this treaty in the spirit of peace, friendship, and respect.

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This process has tested my resolve and given me an avenue to heal. Healing, however, is not a solitary pursuit or endeavour. Thank you to all who have been a part of my journey home.

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For the forgotten, silenced, failed or neglected,
the lost or never found, those taken, erased or held down.

For those who remain invisible.

May you find your way home.

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GLOSSARY OF TERMS

Anti-oppressive

(Chapter 6) - pg. 54 | Anti-Oppressive/
Anti-Oppression work seeks to recognize the oppressions that exist in our society and attempts to mitigate its affects and eventually equalize the power imbalance in communities.

Bounce-back approaches to resilience

(Chapter 1) - pg. 24 | Approaches to resilience that aim to return to, restore, or maintain normative societal states.

Bounce-forward approaches to resilience

(Chapter 1) - pg. 24 | Approaches to resilience that aim to transform or innovate the status quo or the normative societal state.

Causal Layered Analysis (CLA)

(Chapter 3) - pg. 37 | Causal Layered Analysis is a foresight method and tool developed by Sohail Inayatullah to explore the causal relationships and implications between the day-to-day, the system environment, the worldview held, and the myths believed. This analysis is useful in generating alternative future scenarios.

Decolonize

(Chapter 7) - pg. 58 | The process by which the dominant beliefs, principles, and value systems shaping social structures and social systems are examined, analyzed, and decentralized.

Dream Capital

(Chapter 6) - pg. 53 | A conceptual tool used to harness and position collective visions of preferred futures at borders of power.

Foresight

(Chapter 1) - pg. 19 | The ability to envision or the action of envisioning plural futures including but not limited to what will happen or be needed/applicable in future states.

Homeostatic bounce-forward approaches to

resilience (Chapter 5) - pg. 49 | Approaches to resilience that transition beyond the status quo to transform and innovate normative societal states through the action of balancing power networks structures and systems.

Intersectional

(Chapter 3) - pg. 39 | “The interconnected nature of social categorizations such as race, class, and gender as they apply to a given individual or group, regarded as creating overlapping and interdependent systems of discrimination or disadvantage” (Crenshaw, 2020).

Operationalization

(Chapter 1) - pg. 23 | “To put into use or operation. To express or define (something) in terms of the operations used to determine or prove it” (Oxford Languages).

Power Analysis

(Preface) - pg. 14 | The act of considering and closely examining the impacts of power structures and systems.

Resilience-building / Resilience-building

activities (Chapter 3) - pg. 37 | The act or activities required to create strategies, policies, collectives or initiatives that increase or advance the resiliency of a city, community, group or organization.

Systemic Design

(Chapter 1) - pg. 19 | Systemic design combines systems thinking and theory with life-centric design to aid designers in solving the complex problems of society’s current and mounting challenges.

00

_PREFACE

Resilience is often understood as the ability to thrive in the face of adversity. Many political and social systems around the world have prolonged the oppression of disenfranchised groups for generations. With climate change and globalization helping to reveal increasing and omnipresent inequities to those in power, leaders are being pushed to consider a new kind of resilience—one that applies not only to a single person, but in some cases, to an entire nation. This shift must require that, in our pursuit of resilience, we address the relationships between the powerful and the powerless to ensure the rights, health, and freedom of future generations.

Resilience and the opportunity it presents to address power imbalances is evident in the power dynamics quite often present in acts of violence against women. Violence against women is culturally embedded in the patriarchal structure of most societies, offering deep opportunities for power analysis (Kelly, 2011). In literature exploring theories of intimate partner violence (IPV),¹ Kelly makes reference to how bell hooks, feminist author and social activist, outlined the relationship between patriarchy and violence as:

...inextricably linked to all acts of violence in this society that occur between the powerful and the powerless, the dominant and the dominated. While male supremacy encourages the use of abusive force to maintain male domination of women, it is the Western Philosophical notion of hierarchical rule and coercive authority that is the root cause of violence against women, of adult violence against children, of all violence between those who dominate and those who are dominated. (Kelly, 2011, p. E30; hooks, 2011, p. 118)

My first encounter with the concept of resilience emerged from personal experience with IPV. This experience meant a constant pursuit of maintaining the status quo and ensuring an illusion of normalcy at all costs. At the time, my personal understanding of resilience meant masking any evidence of shock or stress from the relationship. This paper embodies that personal trauma as a metaphorical reference system and a storytelling tool. Due to constraints of this research project, this paper cannot address the entirety of the system of violence against women but uses personal experience as an analytical metaphor for addressing barriers that individuals or groups pursuing resilience-building will need to consider if they aim to transform or function within and outside current dominant systems of power. Masking the marks of my abuser helped me avoid further conflict with friends and family but did not address the underlying system of abuse I was enduring.

Several philosophical tensions, discussed below, were considered at the onset and for the duration of this research project. It is my perspective that these potentially contradictory and complex notions are what tethered me during this project, which at times felt like walking a tightrope. These tensions shaped and informed the more personal approach taken with this research.

- Injustice versus Justice -

Dialectic between injustice and justice influenced an oscillating worldview throughout this project. Prior to this project I had long approached making art (the act of creating) from a place of injustice. It was a medium by which

¹ / The CDC describes **Intimate Partner Violence (IPV)** as “physical violence, sexual violence, stalking, or psychological harm by a current or former partner or spouse” (Centers for Disease Control, 2020).

I could express pain and suffering that I felt internally and witnessed in the wider world. It was during an initial exploratory conversation with a social practice artist² that I was challenged to consider approaching both my art and my research with a justice perspective, replacing pain and fear with hope and healing. Throughout this research project I have risen to and fallen short of that challenge. An inner dialogue of reparations versus forgiveness is ever present, influencing the rise and fall of my spirit and subsequently the approach to my work.

- Academia versus Art -

Academia and art create different types of impact, both equally deserving of recognition. When I was ready and safe enough to call back aspects of myself that I had locked away to survive, art gave me the key in a way no other medium had. Art unlocked a new nonverbal form of communicating and expressing something loudly without upsetting the room. However, because you cannot quantitatively measure in units the amount of healing received through artistic expression, its impact and function can be difficult to assess. Analyzing and measuring the emotional impact and effectiveness of artistic expression requires a different set of eyes and ears. It requires different systems than those employed by classical academic disciplines such as the sciences and mathematics.

In turn, my evolving approach to art as a path toward healing, and a mechanism to process trauma in a society that often ignores the plague of violence against women, met harsh opposition in my pursuit of admiration and acceptance in classic academia. This battle between the power of social practice art and the power of academic research raged throughout this research project. It fueled a deep internal debate between maintaining an unbiased approach as a researcher and, as an artist, desiring the work to support those who are systematically oppressed.

- Constitutional Capacity -

My faith in a government's capacity to protect its citizens wanes due to the injustices to which I have borne witness at the hands of racist and oppressive U.S. policy. "The English law that upheld the husband's right to employ moderate chastisement in response to improper wifely behaviour was used as a model for American law" (Kelly, 2011, p. E31). According to Kelly, "in 1824, the state of Mississippi legalized wife-beating and laws preserving the legality of marital rape were common in the United States until the late 1980s and early 1990s" (Kelly, 2011, p. E31).

2 / Social practice art describes art and artists that prioritize collaborative making and creating with an emphasis on community. In social practice art, or socially engaged art, it is often the process of creation that takes precedence over the final product.

3 / Redlining: "Refusing (a loan or insurance) to someone because they live in an area deemed to be a poor financial risk" (LEXICO, Powered by Oxford, 2020).

4 / Gerrymandering: "The act of changing the size and borders of an area for voting in order to give an unfair advantage to one party in an election" (Oxford Learners Dictionary, 2020).

The federally mandated and explicitly racist segregation policies that emerged from the New Deal led to abusive power tactics used to control bank mortgages (Redlining)³, and voting districts (Gerrymandering)⁴—the ramifications of which persist today (Rothstein, 2017). Policies constituted on the basis of discriminatory and oppressive value systems fuel a persistent anger within me. At the onset of this project, that anger manifested in the fear of what injustices or denial of human rights might be similarly constituted in the name of a resilient city, country or globe. This fear summoned questions about the long-term future, sustainability and capacity of resilience practices to address issues of power. How will resilience policies evolve over the next 20, 40, or 60 years—and at whose expense? ■

CHAPTER BREAKDOWN

Chapters 1 & 2: Context

The first chapter of this paper introduces the exigence and areas of inquiry for this study while deconstructing the primary research question. The second chapter provides context by presenting current discourse related to the resilience field and provides an overview of the boundaries that helped frame the exploration.

Chapters 3-5: Process

The third chapter provides an overview of the methodology, including both information-gathering and data analysis, with a look at each phase of the research. The fourth chapter presents key findings and the fifth chapter introduces insights gleaned from the research.

Chapters 6-8: Contributions

The final three chapters present concepts derived from the insights and present a pathway forward for their continued exploration.

01

_INTRODUCTION

PURPOSE



The purpose of this research project was to explore current and aspiring approaches to both defining and building resilience to see what insight they might offer into how to more equitably consider defining, approaching, and building resilience in the future. A primary goal was to combine envisioning and complexity. **Envisioning**, in this context, is the imaginal perspective reached through the use of foresight and strategic research. **Complexity** refers to the non-linear perspective of uncertainty explored through the engagement of stakeholders and systemic design. It was crucial to have portions of the research and findings apply and ladder into active and current efforts on a city and community level. It was equally important that these local findings maintain enough generalization to be adapted to other city and global resilience pursuits.

EXIGENCE



The relativity of resilience and the notion that it can mean different things depending on context, perspective and agenda presents the possibility for the definition of resilience to transform current systems of power and oppression that impinge on the basic human rights of people the world over. This research examines how we engineer foundational processes of building definitions of resilience that consider equity and support the building and repairing of a just city.

THIS MAJOR RESEARCH PROJECT EXAMINES:

How might resilience be defined to build equitable, just futures?

Further research questions emerged throughout this project and are considered to be contained in this primary research question.

How Might /

The use of **how might** creates an imaginal frame for the exploration of inquiry which supports a creative and future-oriented process.

Resilience /

The word **resilience** is the subject of this study. Therefore, the very definition and understanding of the term (at the inception of inquiry) is undetermined.

Defined /

In the context of this inquiry, **defined** is understood to be the act of discovering and setting forth the meaning of something, such as a word, in addition to determining or identifying the essential qualities or meaning of a concept (Merriam-Webster Dictionary, n.d).

To Build /

Build refers to the development of activities, networks, relationships, engagements, processes, approaches, strategies, and policies that facilitate, espouse, and embed equitable and just practices to resilience.

Equitable /

Equitable in this context surpasses the notion of being fair and impartial and considers at the core social equity and social justice. We consider it here to address equity as “a more flexible measure allowing for equivalency while not demanding sameness” (McSherry, 2020, para. 3; Guy & McCandless, 2012). Encapsulated in this term is the question *What does a future require for it to be considered just or equitable?*

Just /

In considering the concept of what is **just**, Fitzgibbons and Mitchell make mention of Meerow & Newell, who “distill the robust area of critical research [related to justice in resilience] into a framework, imploring researchers and practitioners to consider the complex trade-offs of urban resilience through the “5 W’s”: whose resilience is prioritized, against what shocks or stresses, when, where, and why?” (Fitzgibbons & Mitchell, 2019, p. 5; Meerow et al., 2016).

Futures /

In this context (Figure 1), **futures** refers to the preposterous, possible, plausible, projected, probable and preferable visions, desires, and perspectives of the future (Voros, 2017).

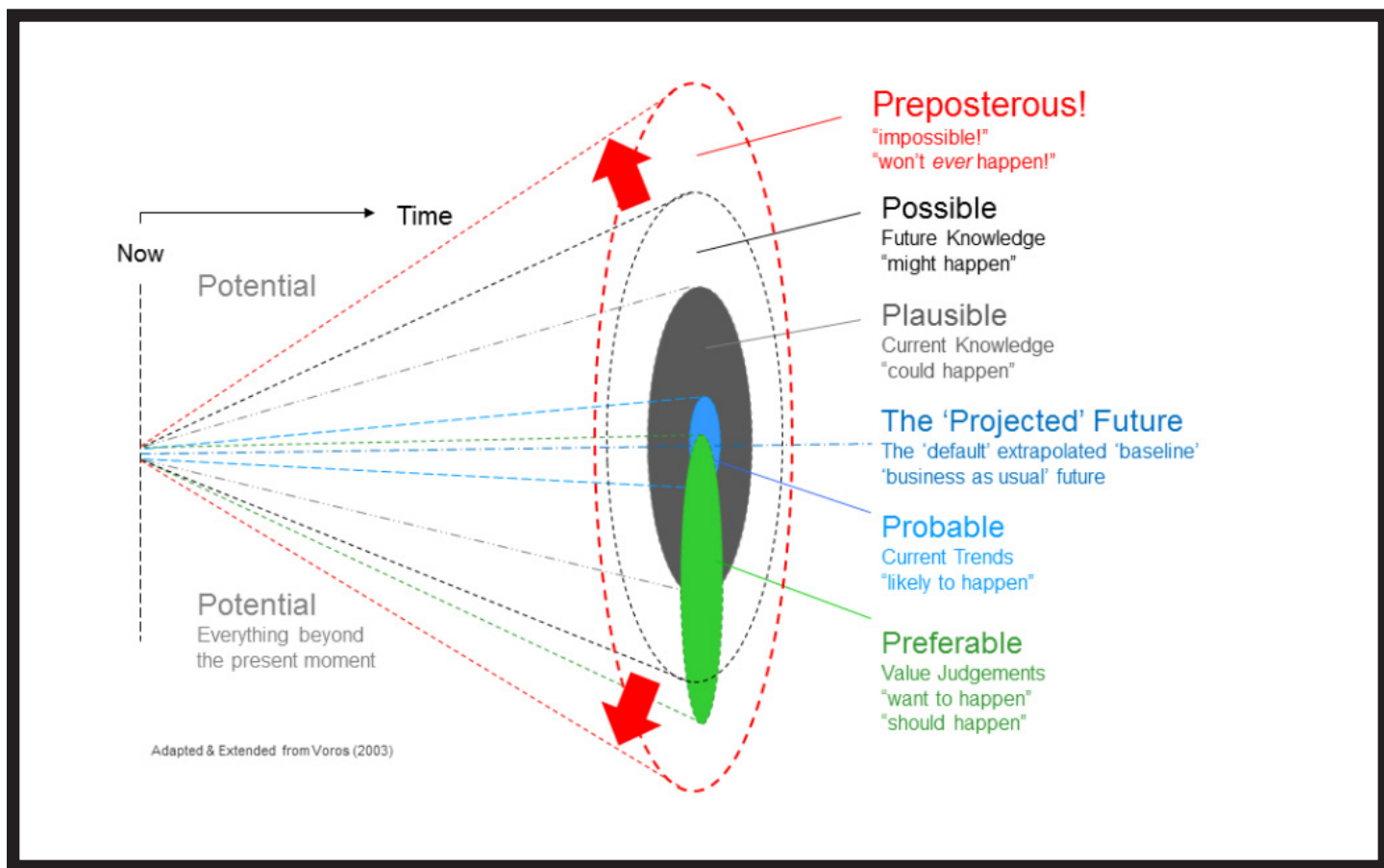


Figure 1. Futures Cone (Adapted & Extended from Voros 2003)

AREAS OF INQUIRY

My experience of IPV provided a metaphorical understanding of resilience which informed the areas of inquiry for this research project, encouraging me to question the purpose of how we define resilience. This metaphorical understanding revealed insights into oppressive power relationships and structures while aiding the exploration of my relationship between self, community, and the future. The arrival of the COVID-19 disease to North America in the spring of 2020, and its ensuing global pandemic, have further validated and provided insight into these areas of inquiry (Figure 2).

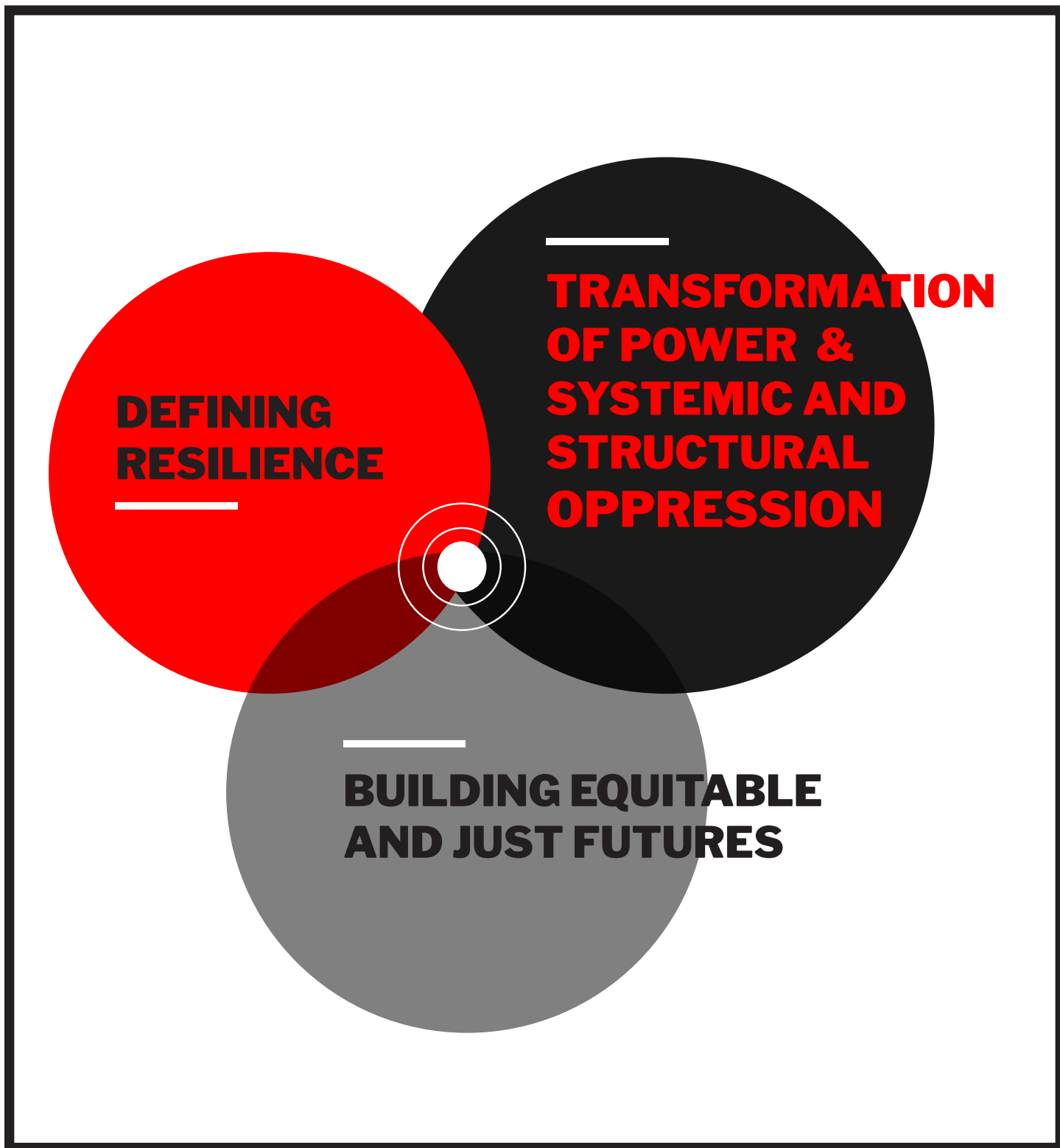


Figure 2. Exigence and Areas of Inquiry

Area of Inquiry A: Defining Resilience

How we define concepts and/or ideals shapes the policies we use to regulate and apply these definitions in society. Language used to create the understanding of a concept or term influences how it will manifest for certain segments of the population in the future. The definition and connotation of a social term such as **resilience** can determine its impact within the confines of society. A definition can determine how a social construct is built, regulated and controlled and, as a result, determine whom it benefits or harms; therefore, it can indirectly influence the inclusionary and exclusionary attitudes of those social constructs. The term **resilience** maintains the power to transform systems that reinforce oppressive social constructs that espouse resilience—but only for the few. In the face of this transformation, if approaches to resilience become defined by communities that have been “othered,”—denied and oppressed—what future might we be able to create then?

Literature provides varied definitions for the term **resilience**, distinguished by field, industry, and sector. The categorizations and contexts of resilience are in some cases vague, lacking universal definition and understanding (Kimber, 2018). The vagaries of the term **resilience** have led to its adoption as a boundary object⁵ to aid disciplines with language barriers in finding common ground (Brand & Jax, 2007; Kimber, 2018). The challenge within a boundary object term, however, lies with the successful operationalization of that term—in this case, **resilience**. The concept of community resilience deserves more representational⁶ and relative definitions of resilience—definitions that serve diverse communities of peoples in which the determinants of resilience are context-based. We see a need for relative and locally relatable definitions most importantly when it comes to defining community resilience. Driving the context-specific *Resilient Conversations Toolkit*⁷ is an acknowledgment and emphasis by the City of

Toronto and its partner organization, The Centre for Connected Communities, that a community’s definition of resilience is and should be uniquely defined for, but more importantly, by that community.

The relativity of resilience is further evident in the varying degrees of impacts COVID-19 has had on the global population. While some

5 / A boundary object defines a singular term that contains or binds different definitions of that term to be used by different groups, sectors or populations.

6 / Representational refers to a body of people that represent plural forms of race, culture, ethnicity, socioeconomic status, gender, religion, etc.

7 / “The Resilient Conversations Toolkit gives individuals, organizations, and institutions the language, means, and opportunity to convene their own Resilient Conversations. By using the tools to have small group discussions across this city we can help one another reflect deeply on what it means to build a more resilient Toronto. The Resilient Conversations project was produced through a co-development partnership between ResilientTO and Center for Connected Communities (C3) and in consultation with the City of Toronto’s Social Development Finance and Administration (SDFA) Division” (The Resilience Conversations Toolkit, 2019).

classify the global pandemic as “the great equalizer,” others acknowledge that “generations of inequity cannot be erased simply by giving two people of differing economic [and cultural] backgrounds the same disease” (Cheney-Rice, 2020, para. 5). The ripples of COVID-19 have quickly grown into cultural, racialized and politicized waves exposing the sharp differences in daily realities for global humanity that existed long before economic shutdowns and quarantine efforts. An act as simple as washing one’s hands requires that a person have access to clean and disposable water. The act of wearing a mask requires the absence of racialized stigmas for people of colour wearing masks. The act of staying at home is not always synonymous with safety if the home is a volatile and hostile place.

If social injustices and catastrophic events, such as a global pandemic, are not universally shared or experienced, focus must be directed to determining symbiotic processes for combining local, context-based approaches to resilience with universal solutions, policies, and strategies for global resilience. (If injustices are not universally shared or experienced, how are we to respond with universal solutions, policies, or laws?) The value of relative definitions of community resilience, and the larger umbrella of general resilience, make developing and constituting a universal definition of resilience a contentious process.

Area of Inquiry B: Transformation of Power & Systemic and Structural Oppression

Dominant bounce-back approaches to resilience prioritize maintaining the status quo and returning to a “normative”⁸ societal state (Urban Resilience Project, 2015; Matin et al., 2018). Research suggests that the dominant bounce-back approaches to resilience do not confront power and equity or account for the unjust systems we currently maintain in our pursuit of a “normative” societal state (Urban Resilience Project, 2015; Matin et al., 2018). As a result, current practices surrounding resilience lack a justice focus and fail to address dysfunctional systems contributing to structural oppression and social vulnerability (Fitzgibbons & Mitchell, 2019; Matin et al., 2018). Fitzgibbons and Mitchell further support this issue in their statement that “advancing justice and advancing resilience need not be at odds” (Fitzgibbons & Mitchell, 2019, p. 3). Current approaches to resilience used by North American cities, for example, maintain the

capacity to reinforce current power structures and systems that perpetuate injustices that exist in society’s maintenance of normalcy. Resilience practices must expose and aim to repair deeply ingrained injustices to avoid creating strategies and policies that reinforce negative aspects of discriminatory, colonial, and patriarchal societies. Without resilience practices that consider and analyze equity, justice, and power, externalized and internalized oppression will go unaddressed and the actualization of collective, representational futures made less so.

Area of Inquiry C: Building Equitable and Just Futures

Research suggests that bounce-back approaches to social resilience preserve and prioritize risk management, mitigation, and adaptation in place of re-imagining and envisioning alternative futures (Meerow & Stults, 2016). Alternatively, bounce-forward approaches to resilience aim to reach an improved societal state and acknowledge the opportunities that shocks present to innovate and transform social systems (Houston, 2015; Urban Resilience Project, 2015). However, are bounce-forward approaches to resilience accounting for who benefits when they innovate and transform social systems? More importantly, what voices are given the power and opportunity to author that innovation and process of re-imagining for the future? Do only those in power have the capacity to predict? Do those in power hold more influence over the visions that shape our future and the values that drive our dreams?⁹ The process by which we collectively build visions for the future that are inherently just and equitable is of particular importance with regard to bounce-forward approaches and deserving of closer examination. How can we consider the process by which we envision collectively the prioritization of justice in our visions for the future? How can we build processes that support local and cultural

8 / The use of the term **normative**, normal or normalcy used herein refers to the status quo or standard precedents.

9 / Dreams here refers to our hopes and visions for the future.

02

_DEFINITIONS

The previous chapter deconstructed the primary research question and introduced the areas of inquiry for this study. This chapter will provide context by presenting current discourse related to the resilience field. It will offer a brief evolution of definitions, an introduction to dominant approaches to resilience that North American cities are currently exploring, and an overview of the boundaries that helped frame the exploration of this study. As part of this project, I had the opportunity to observe a working research group at the University of Toronto's Dalla Lana School of Public Health. The research group was assembled for a project funded by the Canadian Institute for Health Research (CIHR), entitled Healthy and Resilient Cities: A Connected Community Approach (2019-2020), and conducted an extensive literature review focused on community resilience theory and practice from which this chapter, and subsequently this project, benefited greatly.

The ability of an entity or a system to get back to normal, recovering or returning to a pre-crisis state, is a fairly commonly held understanding of resilience which can be tied back to Holling's original definition of ecological resilience, which speaks to maintaining "the same" or the idea of normalcy (Holling, 1973, p.14):

But there is another property, termed resilience, that is a measure of the persistence of systems and of their ability to absorb change and disturbance and still maintain the same relationships between populations or state variables. (Holling, 1973)

The ecological definition of resilience evolved toward a social-ecological definition of resilience, actively employed by the fields of civil engineering, medicine, and emergency management and defined as "the capacity to adapt or transform in the face of change in social-ecological systems, particularly unexpected change, in ways that continue to support human well-being" (Poland et

al., 2020; Folke et al. 2016). In the years following Hurricane Katrina, the concept of social resilience surfaced from research that began to explore the discrepancies of response and recovery between high-income and low-income neighbourhoods in the city of New Orleans, Louisiana. Nestled within the wider term of social resilience is community resilience. Social resilience reflects how a community builds collective resilience to extreme shocks and chronic stressors; more specifically, it is the causal relationship between chronic stressors and their impact on the function of a community to respond and survive extreme shocks (Poland et al., 2020).

Global institutions have also contributed to the resilience discourse. In 2014, the Rockefeller Foundation funded a global initiative named the 100 Resilient Cities (100RC) program, which concluded in July of 2019. This program supported the design and development of resilience strategies in 100 cities around the globe. The 100RC program website defines resilience as:

the capacity of individuals, communities, institutions, businesses, and systems within a city to survive, adapt, and grow, no matter what kinds of chronic stresses and acute shocks they experience. Shocks are typically considered single event disasters, such as fires, earthquakes, and floods. Stressors are factors that pressure a city on a daily or reoccurring basis, such as chronic food and water shortages, an overtaxed transportation system, endemic violence or high unemployment. City resilience is about making a city better, in both good times and bad, for the benefit of all its citizens, particularly the poor and vulnerable (Rockefeller Foundation, 2018).

Under that umbrella definition, each city developed definitions unique to them as they drafted their resilience strategy. The cities of Boston, Dallas, and Vancouver, for example, all have a

focus on justice and equity within their city's resilience strategies and, by association, their definitions (Fitzgibbons & Mitchell, 2019). The city of Dallas states in its resilience strategy that "A resilient Dallas is an equitable Dallas," further supported by its primary goal of "Advancing equity in city government." (Dallas Resilience Strategy, 2018). Boston defines its resilience strategy from a collective perspective:

We believe that the only way to foster citywide resilience is to address racial equity along with the physical, environmental, and economic threats facing our city. In this spirit, we present Resilient Boston. This strategy strives to ensure that all Bostonians have the resources they need to overcome obstacles and thrive throughout their lifetimes. Only when every resident is able to reach their full potential, regardless of their background, will we be a truly resilient city. (Boston Resilience Strategy, 2017, pp. 8, 9)

Vancouver defines its resilience strategy as Connect - Prepare - Thrive:

From disasters to economic inequity, cities around the world are tackling the most pressing issues of our time. Through holistic initiatives supporting prepared neighbourhoods, a collaborative government and safe and adaptive buildings and infrastructure, this multi-year strategy builds our collective capacity to prepare for, recover from and thrive in the face of changes and challenges. (Vancouver Resilience Strategy, 2019, p. 2)

The City Resilience Index, developed by Arup and the Rockefeller Foundation, supports a similar definition to that of 100RC, defining city resilience as the capacity of individuals, communities, and systems to adapt, survive,

and grow in the face of stress and shocks, and even transform when conditions require it (City Resilience Index, 2015). The United Nations considers resilience in its 2030 Agenda for Sustainable Development and associated Sustainable Development Goals as well. Specifically, Goals 9 and 11 and Targets 1.5, 9.1, 9.a, 11.c, and 11.b all make mention of resilience¹⁰ (Fitzgibbons & Mitchell, 2019).

Emerging city- and agenda-specific definitions are backdropped by the considerations of resilience as a process, a set of principles, an outcome, or a mitigation and adaptation strategy, complicating the pursuit of a universal defini-

10 /

United Nations Sustainable Development Goal 9: Build resilient infrastructure, promote sustainable industrialization and foster innovation

United Nations Sustainable Development Target 9.1: Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all

United Nations Sustainable Development Target 9.A: Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing States

United Nations Sustainable Development Goal 11: Make cities inclusive, safe, resilient and sustainable

United Nations Sustainable Development Target 11.C: Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials

United Nations Sustainable Development Target 11.B: By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels

United Nations Sustainable Development Target 1.5: By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters

tion. Alongside that pursuit stand two dominant approaches (bounce-back and bounce-forward) within social resilience that are of significant importance and focus for this project. Literature suggests that the bounce-back approach bypasses stressors on the system and focuses predominantly on responding to shocks or mitigating future shock-associated risk. In simplified terms it is a reactive approach rooted in maintaining a normal “static” outcome. The bounce-forward approach is process-driven with long-term goals of leveraging shocks to transform normative social-ecological systems that reinforce and manufacture global oppressive value structures that manifest as stressors (Poland et al., 2020).

Cities’ approaches to resilience differ in their responses and attitudes toward shocks and/or stressors. A shock can be considered a catastrophic event, such as Hurricane Katrina or COVID-19; stressors are considered actors that exert chronic stress on a system, such as poverty, lack of access to social services, unequal power distribution, and systemic racism (Poland et al., 2020). The City of Toronto defines shocks and stressors this way:

*A **shock** is a sudden sharp event that threatens the immediate well-being of a city. In Toronto, we face potential shocks due to flash storms that lead to flooding, heatwaves, blizzards and cold snaps, and power outages.*

*A **stress** is chronic, meaning it plays itself out day after day. Stressors can weaken the fabric of our city, and impact our ability to bounce back in response to a shock. In Toronto, these stresses include growing economic inequality among residents, a worsening housing crisis, difficulty getting around, and ageing infrastructure. (Toronto Resilience Strategy, 2019, p. 20)*

Currently, the City of Toronto’s resilience strategy, launched in the summer of 2018, “sets out a vision, goals, and actions to help Toronto survive, adapt and thrive in the face of any challenge, particularly climate change and growing inequities” (Toronto’s Resilience Strategy, 2019, p. 7). Figure 3 illustrates the framework for the City of Toronto’s resilience strategy. The strategy is founded on six resilience challenges that make up Toronto’s resilience context: equity, climate and environment, civic engagement, community and neighbourhoods, housing, and mobility. These six challenges are to be addressed through three focus areas: A) people and neighbourhoods, B) infrastructure, and C) leading a resilient city. Each of the focus areas includes a set of goals and affiliated actions. Of the total 27 actions the strategy outlines, the City of Toronto identified four as priority action items that were to build on existing partnerships and investments with the City.

Of the four priority action items identified in 2019, three of them related to focus area A: People and Neighbourhoods. Toronto’s resilience strategy, with a prioritization on People and Neighbourhoods, served as contextual grounding and helped frame this research project as it relates to community resilience within the city of Toronto. Current community resilience efforts in Toronto are exploring to what end bounce-back and bounce-forward approaches are either effective or detrimental (Poland et al., 2020). To that end, primary stakeholder groups this project aimed to include were Torontonians from equity-seeking groups, city government officials from the resilience office and offices connected to work the resilience office conducts, community and resilience leaders working in academic and private institutions, community backbone organizations, and community-led organizations. ■

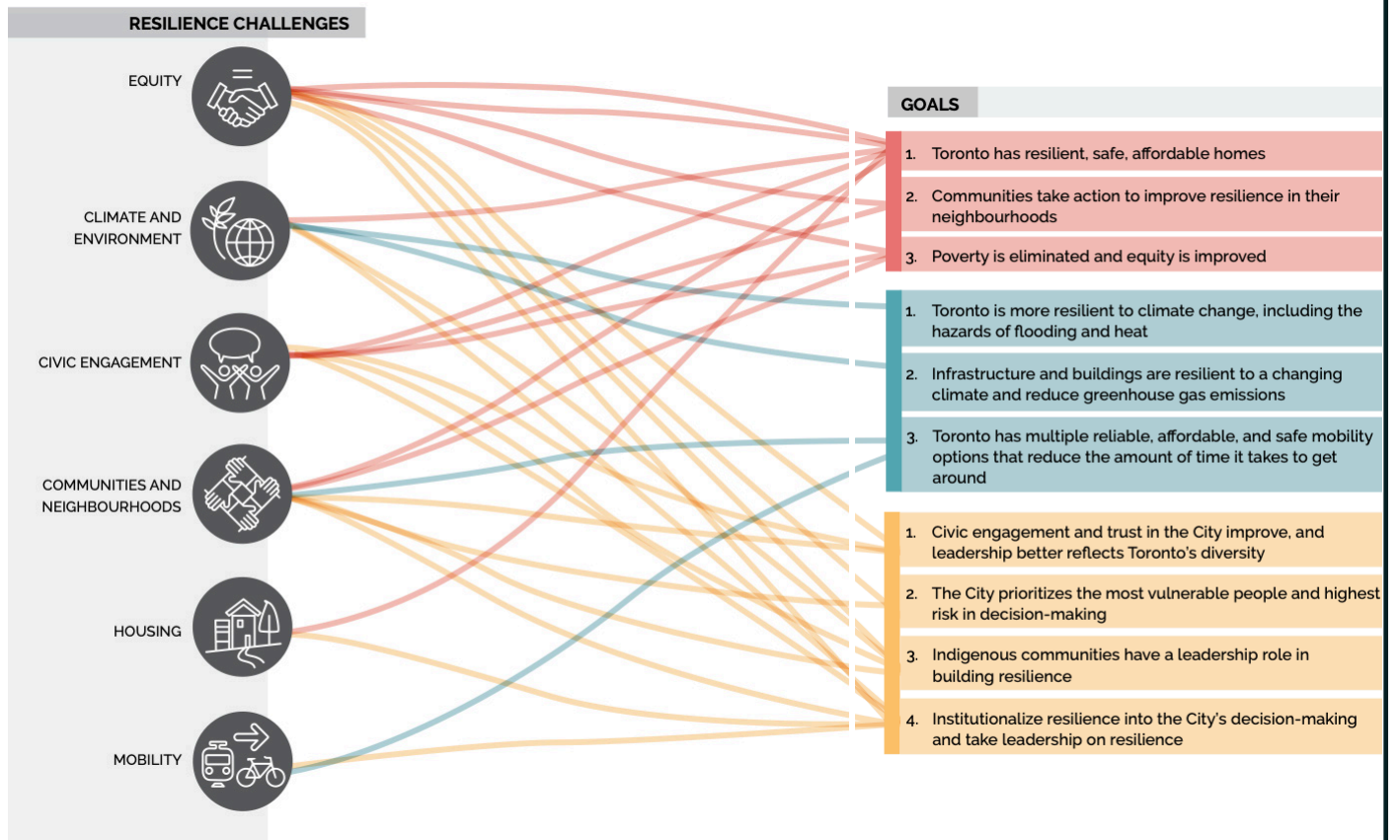


Figure 3. Framework used for the City of Toronto's Resilience Strategy (continued on page 31)

	FOCUS AREA	ACTION	
PEOPLE AND NEIGHBOURHOODS	A	1.1 Support homeowners and renters to prepare their homes for shocks	
		1.2 Enable wide-scale change in apartment towers to improve resilience through the improvement or retrofit of apartment towers and units	
		1.3 Apply a resilience lens to the development of the new HousingTO 2020-2030 Action Plan & ensure comprehensive action to address Toronto's affordable housing gaps across the full spectrum of need	
		2.1 Enhance the capacity of neighbourhoods to prepare for and recover from shocks through grassroots action and network building	
		3.1 Prioritize the implementation and resourcing of the Council-approved Toronto Poverty Reduction Strategy	
INFRASTRUCTURE	B	1.1 Institutionalize an integrated, resilience approach to flooding by adopting the Flood Resilient Toronto Charter	
		1.2 Centralize resources towards a city-wide flood planning and prioritization tool	
		1.3 Review and update existing flood mitigation programs to account for resilience	
		1.4 Take action to mitigate the effects of extreme heat	
		1.5 Communicate, synthesize and scale up ongoing City efforts to advance a system of green and blue infrastructure	
		1.6 Promote a sustainable and resilient food system	
		2.1 Develop a Resilience Lens and apply it to City investments, with a focus on infrastructure	
		2.2 Integrate resilience into development and land use planning processes	
		2.3 Incorporate climate resilience into the City's asset management framework and plans	
		3.1 Create a city-wide mobility action plan through synthesis of ongoing mobility initiatives and priorities, and identification of resilience gaps	
		3.2 Continue to prioritize service and capital improvements to the TTC that make the system safer, more affordable, more reliable, and less crowded	
		3.3 Move more people more efficiently within the existing rights of way by expanding demonstration projects	
LEADING A RESILIENT CITY	C	1.1 Expand corporate civic engagement supports to improve engagement outcomes at the City	
		1.2 Increase transparency and prioritize communications to improve trust in local government	
		2.1 Integrate equity into the City's strategic planning processes	
		3.1 Build relationships with Indigenous communities in Toronto around resilience	
		4.1 Embed resilience as a practice across the City and partners	
		4.2 Integrate climate resilience into TransformTO	
		4.3 Integrate resilience into emergency management	
		4.4 Improve risk management and communication to residents	
		4.5 Support local partners in academia, industry, and community to take leadership on resilience	
		4.6 Position Toronto as a regional, national, and international leader on resilience	

Figure 3. Framework used for the City of Toronto's Resilience Strategy (continued on page 32)



Figure 3. Framework used for the City of Toronto's Resilience Strategy

03

_METHODODOLOGY

The field of resilience research stands to benefit from orienting the current resilience discourse in the future while considering the systemic implications of innovation within the space of resilience-building activities, approaches, strategies, and policies (Cook et al., 2014). The methodology of this project combined foresight, systems thinking, and design thinking methods, tools, techniques, and frameworks to critically approach and examine this study's areas of inquiry. The use of strategic foresight in parallel with systems thinking supports the advancement of social resilience research by evolving resilience approaches toward more just and equitable designs.

The methods and research activities employed (Appendix A) consisted of a literature review, semi-structured subject matter expert interviews, and a multi-stakeholder workshop. The literature review provided an understanding of the global conversation about resilience and the context in which social resilience operates within the city of Toronto. The interviews examined challenges within operational definitions of resilience, resilience research, and dominant resilience approaches. The multi-stakeholder workshop explored underlying structural imperatives shaping experts' current understanding of social resilience and implications for its future. Additionally, the observation of events pertaining to the City of Toronto's resilience strategy and an expert-led working research group provided perspective and insight into the system of relationships between stakeholders active in the pursuit and espousal of resilience.

The previous chapter set context by presenting current discourse related to the resilience field, offering a brief evolution of definitions, an introduction into dominant approaches to resilience being examined today, and an overview of the boundaries that helped frame the exploration of this study. This chapter will

present the project methodology including both information-gathering and data analysis.

- Information Gathering -

The design thinking double diamond framework (Figure 4) was adapted for the structural development of the research methodology for this project. The double diamond framework frames the information-gathering research activities and modes of analysis over two diamonds, each diamond accounting for an iterative cycle of diverging "where new information is gathered" to converging "where information is synthesized and analyzed" (Pacinini, 2017). The four research phases span the two diamonds: the first diamond of inquiry, aimed at "designing the right thing," focuses on the opportunity-finding phase and the opportunity-reframing phase (Nessler, 2016, stage 1). The second diamond of inquiry, aimed at "designing things right," focuses on the foundational ideation phase and the conceptualization phase (Nessler, 2016, stage 2).

Phase 1: OPPORTUNITY-FINDING

The purpose of this first phase was to gather new information with the intent of focusing on understanding more clearly the core opportunities for or challenges to social, city, and community resilience practices and their consideration of equity. This phase examined how resilience and affiliated approaches are currently defined and how the definitions and approaches consider equity. Through attending, observing, and participating in three events (Appendix B) connected to the development and launch of the City of Toronto's Resilience Strategy as part of the global 100 Resilient Cities (100RC) program I was able to gain a better understanding of the context and intent of approaches taken when building civic and

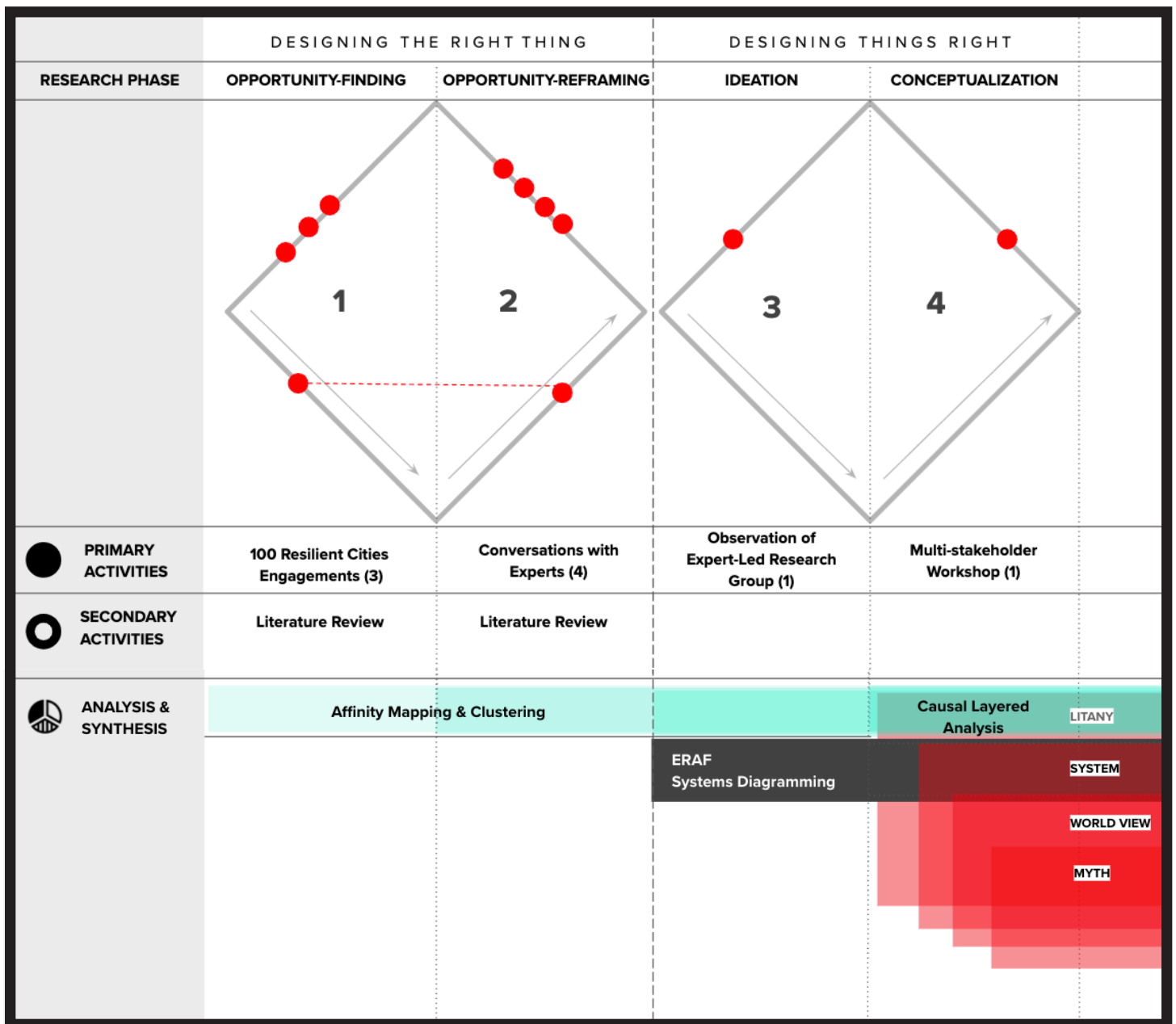


Figure 4. Double Diamond Framework Adapted for Research Methodology

community resilience, as well as how resilience is defined in the context of equity.

Phase 2: OPPORTUNITY-REFRAMING

The purpose of opportunity-reframing was to explore further what opportunities and challenges exist in the current definitions, pursuit, and espousal of resilience. To answer this question I met with four resilience experts to have semi-structured interviews about how themes uncovered in the first phase of data collection were apparent or appearing in their experience and understanding of resilience in their respective fields. These experts are engaged with different levels of resilience building in the fields of public health, public policy, and community organizing.

Subject Matter Expert 1

Resilience Office, The City of Toronto

Subject Matter Expert 2

Anti-black Racism Unit, The City of Toronto

Subject Matter Expert 3

**Dalla Lana School of Public Health,
University of Toronto**

Subject Matter Expert 4

**North York Community House,
Greater Toronto Area**

Phase 3: FOUNDATIONAL IDEATION

The foundational ideation phase marked an opportunity to diverge again and gather new information. This phase examined current approaches taken to resilience building and how/ if they are prioritizing justice and embedding equity. This foundational ideation phase occurred in the context of active resilience efforts and research. I was privileged to be invited to join a working expert-led research group for a project funded by the Canadian Institute for Health

Research (CIHR) called Healthy and Resilient Cities: A Connected Community Approach (2019-2020). Led by Principal Investigator Dr. Blake Poland of the Dalla Lana School of Public Health at the University of Toronto, the Healthy and Resilient Cities Project assembled an interdisciplinary team of academics, leaders of local community-based organizations involved in community resilience-building efforts in Toronto, and senior staff in the City of Toronto's Resilience Office. Over the course of this research project I attended and observed five monthly meetings with this working research group to examine the goals and visions for the future of Toronto's resilience practices and by proxy other global cities.

Phase 4: CONCEPTUALIZATION

This fourth and final phase focused on developing and iterating upon ideas that aimed to address the primary research question of this project. It was during this phase that insights were framed and concepts were explored. This phase prioritized the investigation of structural imperatives¹¹ and value and principle systems driving city and community resilience efforts.

A multi-stakeholder workshop was designed to examine more closely which structural imperatives are driving resilience leaders' collective vision for global cities. The workshop further explored how value and principle systems, shaping these structural imperatives, might then be influencing current approaches to resilience.

The 60-minute long multi-stakeholder workshop took participants through an exercise that was designed and adapted using the Causal Layered Analysis (CLA) foresight method (Appendix C). Using the CLA foresight

11 / Structural imperatives herein refer to urgent and/or essential organizational determinants often influenced by personally held beliefs or values.

method allowed for the exploration of causal relationships between participants' day-to-day realities, the systems within which they operate, the worldviews and cultural perspectives they hold, and the myths or metaphors driving those narratives (Inayatullah, 2008). The use of CLA as a method to inform the design of the workshop facilitated a deeper analysis and exploration of the implications value structures driving approaches to resilience might have on their future application. Participants came with a range of backgrounds, from academic institutions focusing on the intersection of community resilience, public health, and climate change, to grassroots community organizations and community backbone organizations.

- Data Analysis -

The Causal Layered Analysis (CLA) foresight method was used as an analytical framework to conduct four layers/levels of analysis; data collected was analyzed on the litany level, the system level, the worldview level and the myth level (Figure 4). Each level of analysis employed different tools, techniques, and frameworks. This section offers a deeper explanation of how these specific tools, techniques, and frameworks were used to synthesize and analyze data collected.

Affinity Mapping refers to organizing related data into clusters. These clusters are then mapped based on high-level relationships that emerge between them. Affinity mapping and clustering was used to synthesize data collected from the initial literature review, the three 100RC engagements and the four semi-structured interviews to identify key themes emerging from the data (Appendix D). As seen in Figure 4, affinity mapping and clustering was a technique initiated in the opportunity-finding phase but revisited progressively over the duration of all four phases.

The themes identified from the

mentioned affinity mapping were then analyzed and synthesized along with data that emerged from both the opportunity-reframing and foundational ideation phase using the **ERAF Systems Mapping technique**. The ERAF systems mapping technique refers to identifying and understanding entities, relations, attributes and flows within a system to better understand how elements in a system interact with one another (Kumar, 2013). For the purposes of this project one additional category was explored: gaps (ERAF-G). This systems mapping was built out over the course of the second diamond of inquiry (Figure 4). The process of building the systems map was used to synthesize and analyze data from all four phases of the project. It was an iterative process that allowed for consistent and robust re-analysis. As new data emerged over each consecutive research phase, the map was modified and analyzed. The process by which the ERAF-G Systems Map was built can be referenced in Appendix E.

The Causal Layered Analysis (CLA) foresight method was also used as a tool to analyze the causality between the data collected over all four phases. Two parallel CLA analyses were run, one prior to the workshop based on research and data collected from the first three phases—opportunity-finding, opportunity-reframing, and foundational ideation. This CLA was used for the exploration of underlying myths related to focus areas for building resilience that emerged from the affinity mapping and were further explored in the systems mapping. This examined the causal relationships between the micro- and macro-entities¹² in a different way than the systems mapping could accommodate. The second CLA was run with the data collected from the workshop. The findings of both were then

12 / The terms **macro- and meso-entities** were used to distinguish primary focus areas from secondary ones.

compared to identify and explore insights. Key findings yielded from data analysis are discussed further in the following chapter.

- Study Limitations -

Topical Range

Resilience, as a practice, extends into a wide variety of disciplines—from systems theory to political strategies. In his book, *The Human Factor*, Vicente categorizes the human factor into five levels: physical, psychological, team, organizational, and political. The term resilience can be considered in the context of each of these levels. It can similarly be considered and examined in relation to each level of Maslow's hierarchy of needs: psychological, safety, belonging and love, esteem, self-actualization, and self-transcendence (Koltko-Rivera, 2006).

The range and capacity of study on the topic of resilience is a vast and fairly new exploration. However, outside of systems theory, resilience research is lean in comparison to long-standing fields of academic research such as medicine or law (Meerow et al., 2015). The space it occupies across disciplines, fields, and theories made it challenging to bind and scope for the purposes of this study.

Building Trust Takes Time

The initial proposal for this project included a robust international series of workshops with equity-seeking groups and their government representatives. The interpersonal and organizational relationships, networks, and systems required (by myself as the researcher) to collectively design, deploy, and facilitate the workshop series in a just, representational, and intersectional manner required timelines longer than this study permitted. To conduct human-centered research that is nourishing and capacity-building for participants, and not inherently extractive for personal research agendas, requires that the

act of building trust with research participants be prioritized over timelines and budgets. It also requires that the research be of benefit to current on-the-ground efforts and participants. I quickly realized that this work was already being built and mobilized by a deep network of organizations and institutions in the city of Toronto. This required that the research of this project support, extend, and build upon the work already being done. To this end, additional time was required to understand more fully the current resilience efforts being made in the city of Toronto.

COVID-19

During the final phase of this project the world was introduced to COVID-19. Once it was officially classified a global pandemic and an imminent public health threat, it inevitably shaped the way in which research was conducted and analyzed in the final stages of this study. It also directly affected the participants who were involved in the workshop, shaping their involvement and the manner in which they were able to contribute their insights. ■

04

_KEY FINDINGS

The previous chapter presented the methodology for both the information-gathering and data analysis with a look at each phase of the research. This chapter presents the study's key findings. This study yielded a total of nine practice-based focus areas (Figure 5). Practice-based focus areas refer to subject matter fields/foci that should be considered when carrying out activities related to the application of, design or building of specific practices and approaches within a related field. The nine practice-based focus areas identified were deemed necessary for consideration when defining and building approaches to resilience, and are distilled from the intersection of all research and facilitation conducted for this study. Each focus area embodies a type of practice to consider when designing approaches for resilience-building and is presented here as a framing question. Each focus area is presented with specific considerations for implementation based on identified causal relationships between focus areas.

Of these focus areas, *Power Analysis* can be considered the most interconnected focus area due to the nature in which society manages and distributes power and the challenge that analyzing power environments presents for future resilience practices. Research illustrated that power dynamics, structures, and systems, while impacting each of the remaining eight focus areas, had the strongest causal relationships with the focus areas of *Inclusive Governance*, *Prioritization of Justice* and *Embedded Equity* (Figure 5). This study revealed that inclusive governance requires that equity be embedded in an effort to prioritize justice and justly distribute power. When considering how to prioritize justice through resilience practices, this study suggests attention be paid to the planning for fair and just engagement, the promotion of substantive racial and gender justice, and the advancement and centralization of justice

within boundaries of power to support inclusive governance processes that embed equity. To prioritize embedding equity in approaches to resilience, attention must be paid to the processes by which methods are employed and strategies and policies are designed. This will allow for the transition to a more inclusive governance structure in ways that support the prioritization of justice and redistribution of power through resilience practices. Data showed that *Inclusive Governance* must address issues of trust and accountability in policy processes to support autonomous local networks that wield political power.

Key findings further suggest the important role that the representational collective¹³ should play in future resilience practices. In order to build relationships and foster collective processes within communities, we must consider how we are actively working at different levels of engagement from community to municipal spheres. When focusing on *Building Relationships and Collective Processes* we must consider building substantive social cohesion through strong neighborhood connections. We must prioritize civic engagement through civic restoration and processes that prioritize collective experiences (co-design, co-creation) with a commitment to diverse representation.

Research suggests that implementing a practice-based focus on *Neighbourhoods and Communities* can create a landscape, space, environment, and system in which relationships and collective processes can be built through considerate and intentional communication to envision collective preferred futures. When focusing on *Neighbourhoods and Communities*, there must be consideration of what everyday resilience looks like so as to frame space for

13 / The **representational collective** is to be understood in this context as a body of persons with representation from many cultural, economic, racial and political backgrounds working together.



Figure 5: Practice-based Focus Areas for Designing, Defining, and Building Resilience

the creation of collective definitions of community and that community's idea of everyday resilience to emerge and be heard. Resilience strategies must be grounded in neighbourhoods, prioritizing community-led and in-context processes that encourage and embody like-minded connected communities in their approach to bridge the social resilience and infrastructure resilience of a city.

When designers, community members, and/or practitioners work on *Envisioning Preferred Futures*, inception might begin with discontinuing the preservation and persistence of oppressive systems. Only then can the process of iteratively identifying collective needs and priorities be captured when reimagining new futures. The focus of *Envisioning Preferred Futures* entails considering how approaches to resilience influence collective visions of futures within neighbourhoods and communities, and how that visioning intersects with other communities of power or stakeholder communities. A collective and dynamic operational system such as this further benefits from a focus on plural *Ways of Knowing*. A focus on *Ways of Knowing* considers how approaches to resilience embed, employ, and leverage alternative knowledge sets and practices. *Ways of Knowing* are further supported by a focus on *Communication*. This study recommends developing collective processes in parallel with communal space to support and facilitate not only soft but hard dialogue. The collective design of these processes and spaces must, from the inception, aim to address and confront historical injustices and actively repair current injustices. When focusing on *Communication* we must also consider the implications of space on dialogue and the processes used to facilitate different types of

Practice-based Focus Area 1:

POWER ANALYSIS

How are we investigating the management and distribution of power?

Practice-based Focus Area 2:

PRIORITIZATION OF JUSTICE

How are we positioning and enacting context-based definitions of justice?

Practice-based Focus Area 3:

EMBEDDED EQUITY

How are we requiring, from inception, the notion of equivalency without demanding sameness?

Practice-based Focus Area 4:

INCLUSIVE GOVERNANCE

How are we collectively reimagining more representational governance structures and models?

Practice-based Focus Area 5:

NEIGHBOURHOODS & COMMUNITIES

How are we grounding resilience efforts in neighbourhoods and communities?

Practice-based Focus Area 6:

BUILDING RELATIONSHIPS & COLLECTIVE PROCESSES

How are we actively mobilizing and leveraging networks of people and resources?

Practice-based Focus Area 7:

COMMUNICATION

How do we make space and processes for different types of dialogue?

Practice-based Focus Area 8:

ENVISIONING PREFERRED FUTURES

How can we build collective and intersectional visions of the future?

Practice-based Focus Area 9:

WAYS OF KNOWING

How are we embedding, employing, and leveraging alternative knowledge sets and practices?

dialogue. The role of communication and its commitment to diverse representation must also be considered.

This study suggests that these nine identified practice-based focus areas be considered when designing approaches for resilience. The process of addressing and considering these nine practice-based focus areas helps glean insights into how to build the foundation for more balanced resilience approaches with an increased capacity for collective visioning. The exploration of the causal relationships between these focus areas led to several insights discussed in the following chapters. ■

05

_INSIGHTS

The nine practice-based focus areas presented in the previous chapter provide a roadmap for building a foundational knowledge base required to adapt resilience practices into ones that are more inherently balanced—practices that are considerate of both their origin as well as their transformational power and transitional future trajectory. There is insight to be gained if we frame the bounce-back and the bounce-forward approaches to building resilience using a biomimetic reference such as examples of nervous systems. A healthy and functional autonomic nervous system is made up of three divisions (Figure 6): the sympathetic system, the parasympathetic system, and the enteric system (Wehrwein et al., 2011).

The bounce-back approach, rooted in the return to normalcy, operates similarly to the reactive **sympathetic nervous system**, driven by a “fight or flight” response. The **sympathetic nervous system** directs the body’s rapid involuntary response to dangerous or stressful situations. Reactive in nature, the bounce-back

approach responds as would a sympathetic nervous system, overriding the parasympathetic response—a rejuvenative response—by predominantly supporting reactive systems and strategies.

The **parasympathetic nervous system**, which the bounce-back approach overrides/bypasses, is driven by “rest and digest” or “feed and breed” functions—the mundane activities that keep us alive on a day-to-day basis. It is responsible for conserving energy, slowing our heart rate, and increasing intestinal and gland activity. Metaphorically, the parasympathetic system would guide the degree of a society’s response to shocks and chronic stressors. A healthy parasympathetic nervous system helps the body calm down and maintain functionality. It helps regulate the impacts of both chronic stress to the systems as well as extreme shocks.

The **enteric nervous system** is also bypassed with the bounce-back approach. The enteric nervous system, also referred to as our second brain, operates autonomously from the

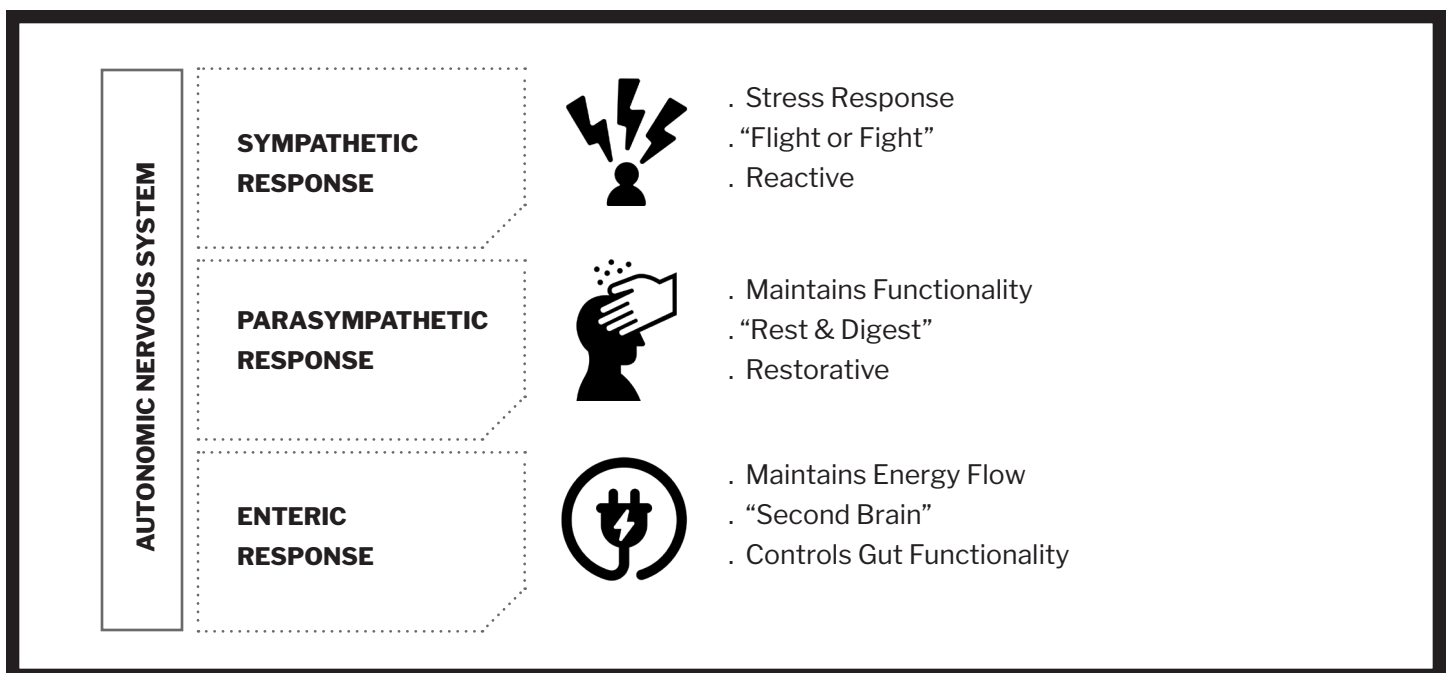


Figure 6. The Autonomic Nervous System

parasympathetic and sympathetic systems but is influenced by them. The enteric system is responsible for the physiological condition of our second brain, our stomach (Gherson, 1999; Jones et al., 2006). In the context of resilience, the enteric system is the system that controls the flow of energy that the parasympathetic and sympathetic systems need, aiding in the recalibration and healing processes.

People with dysfunctional nervous systems respond disproportionately to daily experiences. For example, trauma survivors usually require years of psychotherapy and physical therapy to rebalance their physiological responses to high stress environments away from a “life or death” response. There are similar responses evident in society. The incarceration of nonviolent offenders in the U.S. with the imposition of life sentences is an example of a reactive and disproportionate government response (American Civil Liberties Union, 2015). In this case, extensive long-term punishment is rooted in a reactive state of mind. In comparing this reactive government response to what we are seeing in some countries regarding COVID-19, the question becomes, will short-term responses to effectively bounce back from COVID-19, such as contact tracing, become a long-term solution despite their potential ethical contradictions as it pertains to privacy, for example? What are the impacts when the parasympathetic and the enteric systems are ignored and a short-term response becomes a long-term solution due to a government’s inability to effectively and proportionately regulate a response?

A healthy nervous system maintains a balance between these systems. Framing the dominant approaches to resilience as the nervous system reveals the need for a balance between the three systems noted above. This study presents a formula that can be used to design homeostatic bounce-forward approaches to resilience for the future that aim to regulate balance between the three systems to help create more equitable

and just approaches to resilience. Given this, the question becomes, how do we regulate the reactive nature and restorative capacity of resilience with a focus on its “enteric” function? The focus on approaches to building resilience, moving forward, should be on how to reach homeostasis or balance among the three types of systems described above. This ensures the proportionate balance of reacting, resting, releasing, and healing when building resilience approaches, policies, strategies, and activities.

A bounce-forward approach presents the opportunity to prioritize the homeostasis or a balance among the functions of these three systems. The bounce-forward approach has progressive merit when framed as a functional autonomic nervous system where homeostasis is reached among all three divisions or systems of which it is composed: the parasympathetic, the sympathetic, and the enteric. This functional autonomic nervous system neglects neither the sympathetic nor the parasympathetic, but self-regulates a balanced and symbiotic relationship between a reactive response, a preventative response, and a metabolic response. This framing of the bounce-forward approach (with the goal of reaching homeostasis) for the purposes of equitable resilience-building thrives through a network of react, rest, and release functions. This study revealed insight into what might be required or considered when attempting to achieve homeostasis. In considering a healing-forward approach to resilience, a mindset shift is necessary.

A key ingredient to achieve this proposed paradigm shift, in an effort to solve for homeostasis, is to consider **prioritizing the collective mindset**. This requires a shift from self-actualization wherein we dream to ourselves, to communal actualization wherein we can learn to dream collectively and in the presence of other collective dreams. The

intent of this shift is to create and operate in an environment driven by the prioritization of communal actualization to strengthen individual and collective dream capacity without disregarding the need for self-actualization. Communal actualization and self-actualization must have a relationship, but a differently balanced one. The notion of communal actualization in this context is informed and similarly parallel to our understanding of justice, wherein society asks for the equal treatment of people without demanding sameness. Prioritizing the collective—more specifically, collective dreaming—is discussed further in the following chapter. ■

06

_DREAM CAPITAL

This study led to the development of a concept referred to herein as Dream Capital. This concept, upon further research and development, can be used as an adaptation tool for designing more equitable approaches to building resilience to aid cities, communities and institutions of power in overcoming social, political, economic, and cultural inequities. In concept, Dream Capital can be used both independently or collectively to 1) harness visions of the future and 2) design actionable steps toward equitable and just futures; a plausible tool for future use in transforming and transitioning away from oppressive power systems and structures. The following chapter introduces the concept of this tool with the understanding that further research will be required to develop the concept into a fully functional tool (Appendix F).

This study further posits that Dream Capital is another key ingredient to achieve homeostatic bounce-forward approaches for building just and equitable resilience. Conceptually, Dream Capital is the process by which we operationalize dreams

of the oppressed; it helps build systems that put into operation marginalized dreams. Dream Capital pursues deep intersectional visioning and dreaming—and most importantly—creates processes that transform dreams into reality. It links city planning with social infrastructure and social capital by connecting ordinary citizens with institutions of power and their collective and desired visions for the future (Figure 7). Actors operating within systems and boundaries of power can use the concept of Dream Capital to recalibrate actionable pathways to actualize and develop more intersectional visions of the future. These processes can and should be used in both communities and government, as well as in places where these boundaries of power (among other actors) meet.

Dream Capital functions to facilitate the imagining of collective, intersectional, and desired futures across boundaries of power to drive more iterative value structures that prioritize justice. But the question remains, how is it created? Dream Capital runs the risk

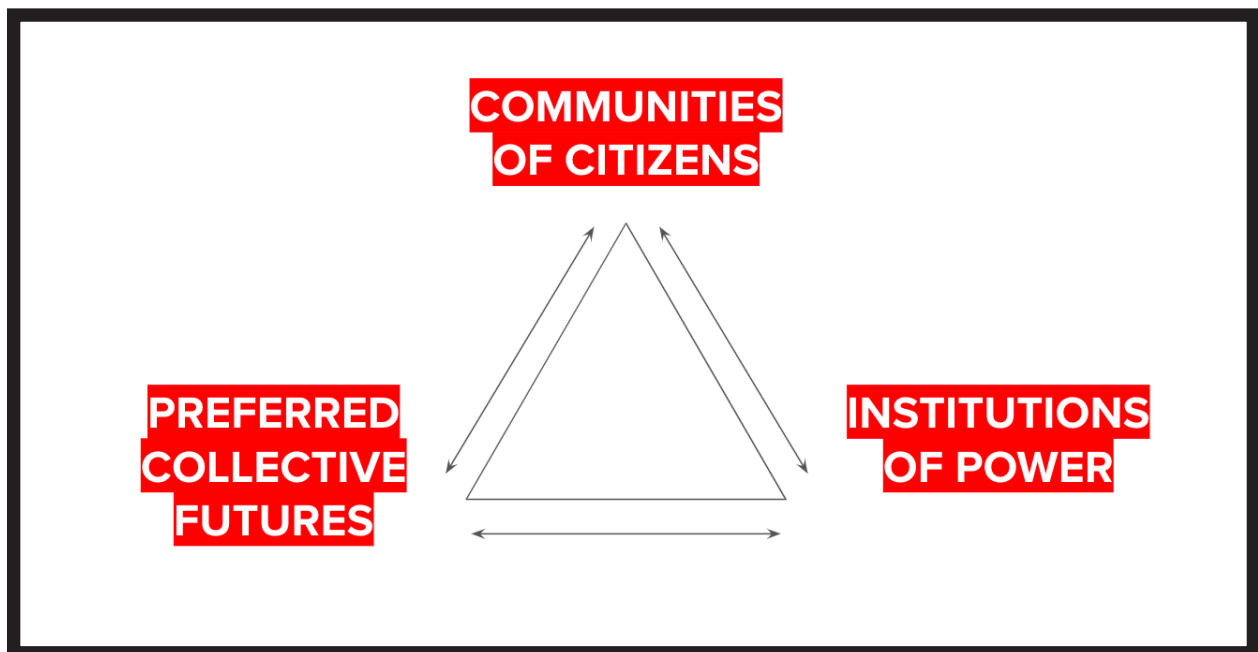


Figure 7. Diagram Illustrating Dream Capital

of stagnating as an idealistic endeavour if its complexity and nuance are not rigorously considered. This chapter seeks to present the obstacles that exist and outline the prerequisite conditions for pursuing the development of Dream Capital as a tool for future use.

To begin actualizing the notion of Dream Capital, it is necessary to recognize that current systems of enactment hinder collective dreaming. The majority of predominant power-driven policy systems fail to function in support of the operationalization of marginalized dreams and intersectional visions of the future. The concept of dreams is embedded in the current policy structure, but those dreams are profit-driven, development-oriented practices that serve only a few (Shamaee & Mohamedali, 2019). Fixed systems that reinforce current injustices and inequality are not inherently anti-oppressive and therefore alternative models that prioritize justice, inclusive of all dreams, are warranted.

Another requisite of Dream Capital is the validation of healing and reparations as an act of social resilience. To accumulate Dream Capital there must exist a willingness by those in positions of power to repair legacies of trauma and internalized oppression conceived through historical and generational disenfranchisement and marginalization. Requiring the act of healing ensures that the process by which Dream Capital is built addresses internalized negativity and oppression, and external structural oppression of both the individual and the community. Therefore, the valourization of dream space can also present a barrier to building Dream Capital, of which we must be considerate. The valourization of the dream space risks not acknowledging or addressing the moderation, dimension, distortion, and constriction internalized oppression and unresponsive power structures have inflicted on dreamers. Dream Capital will need to address the complexity of systems that often moderate and mediate dreams if its deployment is to be successful.

Dream Capital will need to actively identify and dismantle the structures and systems that constrict dreaming capacity while nurturing images of self and collective identity that communities may hold.

Next, we must consider how Dream Capital will operate in the context of power, structures which at times can be non-responsive. Porousness of borders between boundaries of power is required to build Dream Capital, so that collective visioning and dreaming can unfold across those boundaries. We must determine the construction and fabric of these borders to create maximum Dream Capital between and across borders of power. The processes of Dream Capital have the opportunity to evolve porous borders of power, connected via their identity, into equally adhesive boundaries that link different spaces and communities of power—all while protecting cultural identity, heritage, and value systems.

Art practices and the imaginal and creative spheres present foundational space where the development of this adhesive fabric, to support the evolution of porous boundaries of power, might initially be explored, co-created, and piloted. The field of “art” and collective creation can play a pivotal role in championing and facilitating the Dream Capital process. Art as a tool for supporting the imagination is vital to the act of collective dreaming, and demands inclusion in homeostatic bounce-forward approaches to resilience.

Aedh Wishes for the Cloths of Heaven

*Had I the heavens' embroidered cloths,
Enwrought with golden and silver light,
The blue and the dim and the dark cloths
Of night and light and the half light,
I would spread the cloths under your feet:
But I, being poor, have only my dreams;
I have spread the cloths under your feet;
Tread softly because you tread on my dreams.*

~ W. B. Yeats

Conceptually, Dream Capital can harness and transform systems of power responsible for moving resilience towards more just and equitable visions for communities and cities the world over. This warrants further exploration into its development as a tool for future use.

The premise of Dream Capital, as a tool, demands a shift away from oppressive patriarchal value structures towards anti-oppressive value structures—from which processes for developing new collective tools, such as Dream Capital, can benefit greatly. This process requires an alternative system that supports the reorientation of core values when collectively designing new tools. This alternative system (Figure 8) has the capacity to enable us to build more equitable and just futures. Reorienting core values is vital to supporting intersectional authorship of resilience definitions and practices for adoption into policy. Core value reorientation is equally vital to the development of Dream Capital as a tool and also supports the shift toward more homeostatic bounce-forward approaches to resilience. This alternative system for building collective tools, through the reorientation of values, positions Dream Capital as a means to create anti-oppressive definitions of resilience and future anti-oppressive tools for resilience. ■

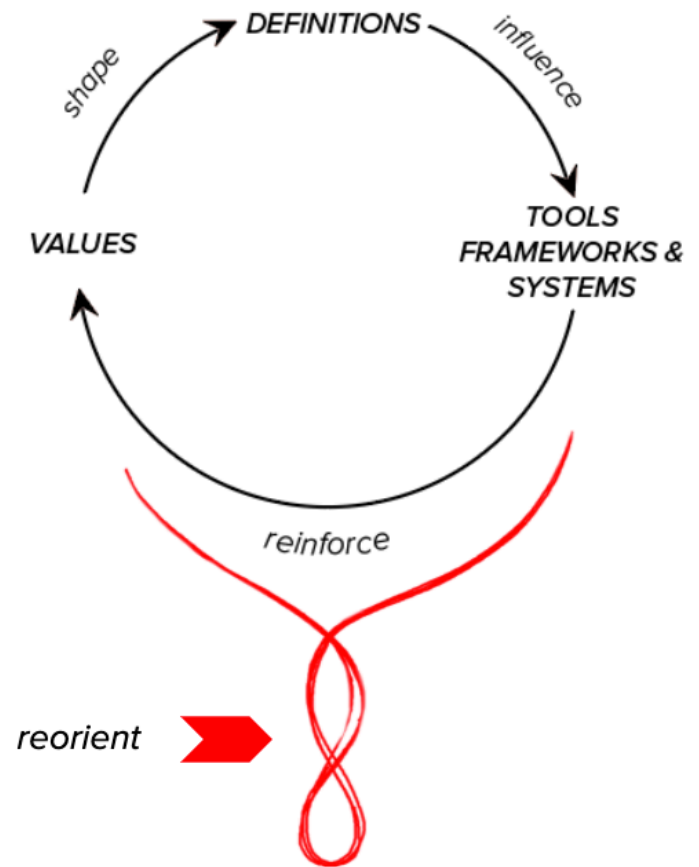


Figure 8. Alternative System for Core Value Reorientation

07

_ONGOING IMPLICATIONS & NEXT STEPS

This major research project aimed to explore latent content shaping current and aspiring approaches to both defining and building resilience to determine what insight they might offer us into future resilience practices. An imaginal perspective was taken through the use of foresight, design thinking, and strategic research to envision how we might evolve and transform current approaches to resilience. This revealed insights that can be considered for the evolution of current approaches. The complex engagement of cross-sectoral and intersectional stakeholders will continue to be a requisite for effectively using systemic design components to advance equitable and anti-oppressive resilience practices, policies, and strategies.

This chapter outlines recommendations for further research related to this study. These recommendations include both immediate and long-term research activities that can be explored alongside related scholarship as well as applied to active efforts on a city and community level. These recommendations can continue to be adapted for application in fellow cities and global resilience pursuits.

This study revealed a lack of future-oriented decolonizing approaches to building resilience that are accessible, rooted in action-research and that mirror the manner in which events occur in a community and in government. The primary follow-up research question to this study asks, *How might we employ decolonizing, anti-oppressive foresight methods to future-oriented approaches for resilience building?* There is value in continued research that supports inquiries and calls-to-action that focus on developing just definitions of resilience. It would be of benefit to further explore the processes required to reorient value systems (Appendix F) to then decolonize processes for resilience-building in an effort to adapt the structures required for decolonization into the dominant approaches for social resilience (Figure 9). It would also be of benefit to further explore the processes required to reorient core value systems. Only then can decolonized resilience-building activities be successfully designed and implemented into bounce-forward approaches to social resilience.

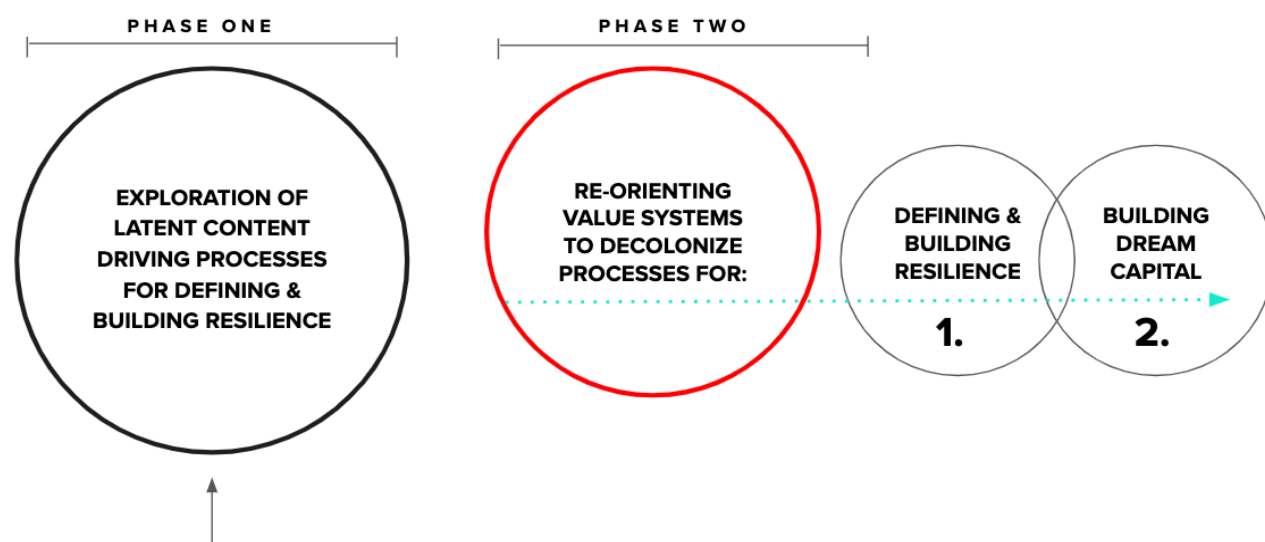


Figure 9. Recommended Progression of Continued Research

- Further Research Activities -

Recommended long-term research activities (Figure 10) to further this study include, but are not limited to, designing and developing decolonizing foresight tools that transcend operational models of community and municipal government. Alongside the development of these tools, a collective design and development of community-led frameworks to facilitate the co-designing of workshops is necessary. This will aid in the advancement and design evolutions of these tools. Further research exploring how the use of experiential futures¹⁴ could be employed for designing prevention policy¹⁵ could greatly influence the development of resilience-building activities now and into the future.

In the near term, continuing the systems analysis conducted for this study to complete a deeper analysis of Toronto's resilience context as a whole would be advantageous (Figure 10). This extensive systems mapping and visualization process offers a critical perspective and insight into the operational environment within which resilience-building efforts function. This process would examine the entirety of Toronto's resilience network with built-in stakeholder matrices synthesized into the systems analysis. The deeper systems analysis would focus more rigorously on the drivers and resistors of change within the system. This systems analysis could be further supported by a horizon scan for each focus area of the city of Toronto's resilience strategy: 1) people and neighbourhoods, 2) infrastructure, and 3) leading a resilient city.

Core capability mapping would also offer an opportunity to probe current resilience efforts more deeply. Mapping the core capabilities of the current resilience initiatives in the city of Toronto would support the deep systems analysis by offering an operational perspective that would allow for the identification of focus areas where capacity-building and skill development opportunities might be of benefit. Equally,

these areas might reveal where the connected communities approach could play a role in weaving the social fabric to mend gaps in the network. This core capability mapping would also point to areas in which future scenarios (complete with future resilience initiatives) could be built out and mined for strategic insights that could be prioritized for current intervention and innovation.

These mapping efforts could also be supported by value mapping the current guiding principle systems evident in literature informing the approaches to resilience for a comparative analysis. This mapping will illustrate and display the foundations of the current value environment and architecture dominating active resilience approaches, offering insight into what value systems are either missing or are purportedly effective with regard to resilience building. A database could be created with an open-access format where overlapping principle systems could be visualized, creating transparency and minimizing redundancy in the development of future principles or strategies.

14 / Experiential futures refers to immersive, multisensory experiences or representations of the future generated to challenge, evolve or extend thinking.

15 / Prevention policy herein refers to laws and or regulations that are less reactive and created with the intent of preventing complex problems before they occur.

The core capability mapping and deep systems analysis could be further supported by running a resilience toolkit diagnostic. Several different power and resilience toolkits have been designed for use in resilience building and power analysis. This process of "diagnosis" would not only explore which foresight tools are most effective for diagnosing, but could also simultaneously vet the effectiveness of the preferred toolkit. It

would explore to what end the toolkit may require breaking or reimagining and to what end it may require deconstruction. The results of such a diagnostic could inform framework development and design for community engagement on resilience building, policy, and strategy implementations. Insights relating to these tools and toolkits could also be synthesized into the current systems map for further insights, creating an enhanced understanding of how the values and function of those toolkits interact in the system map.

- Application Opportunities -

There are a number of current opportunities that could leverage and build upon findings from this major research project. Immediate opportunities for the application of this research can be categorized into three groups: 1) resilience research application, 2) application within and in support of city-led resilience efforts, and 3) community-led resilience building efforts.

My goal is to continue working with the CIHR-funded expert-led research group. I was fortunate to have discovered this group while working on this project and their insights and experience have been invaluable. My

involvement with them could include supporting their current grant applications to support work at the city level through community partnership research programs. Symposia such as the Relating Systems Thinking Design Symposium would be a beneficial platform to collaborate with other systems thinkers and resilience experts to explore more deeply the beginnings of the systems analysis outlined in this report.

The City of Toronto will soon be launching a series of pilot projects implementing specific goals and actions outlined in their resilience strategy. There is opportunity for the work of this study to be further developed in connection and collaboration with those pilot projects and efforts, as well as affiliate programs that are in the early stages of development and piloting. Lastly, the network of community organizations connected to advancing the resiliency of the city of Toronto, such as the Centre for Connected Communities (C3), present several opportunities to further explore and develop findings from this study—specifically in parallel with their theory of change work, their knowledge mobilization work, and their deep listening work. ■

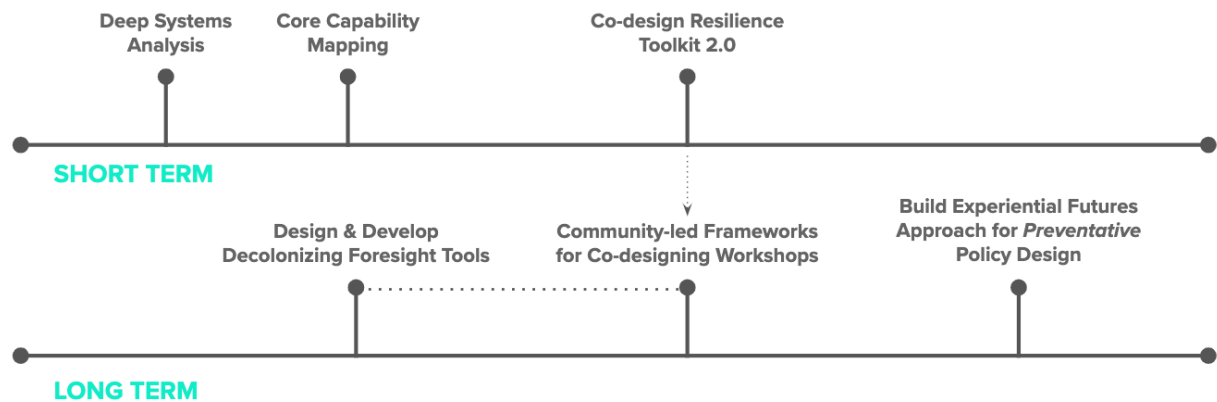


Figure 10. Further Research Activities (long-term and short-term)

08

_CONCLUSION

The story of resilience

must be a story of justice. If we are to strive for truly equitable and just societies, we must repair and restore injustices of the past and act boldly on those of the present. We must prioritize the dismantling of oppressive and colonial values, systems, and structures for the future. The relativity of resilience and the notion that its meaning can vary based on context, perspective and agenda creates the possibility for a definition of “resilience” that transforms current systems of power and oppression that otherwise deny much of the global population their basic human rights. This research examined how we might evolve approaches to resilience in a way that considers equity and supports the building and repairing of a just city. This study used foresight, systems thinking, and design thinking methods, tools, techniques, and frameworks to critically approach and examine the latent content shaping current and aspiring approaches to both defining and building resilience. This exploration offered insight into bounce-forward approaches to resilience for the future. The findings of this study can be applied to current efforts by the City of Toronto and adapted to other cities and global resilience pursuits.

This study suggests that certain ingredients are required to move toward resilience practices that prioritize intersectional justice and embed anti-oppressive solutions, strategies, policies, and processes. The defining contribution of this study is the introduction of Dream Capital as a requisite tool for homeostatic bounce-forward approaches to resilience.

The guiding values, principle systems, and requisites that inform determinants of resilience must actively decolonize processes to emphasize collective well-being and collective impact. They must offer a power analysis that is considerate of the past and the present, and oriented in the future. The approaches to resilience must look to create actionable and accessible resilience-building activities that mirror the operational models of modern government and of communities. The use of strategic foresight in parallel with systems thinking supports the advancement of social resilience research by evolving resilience approaches toward more equitable and just designs. This will aid in further developing preventative, future-forward, anti-oppressive, intersectional, and decolonial approaches to resilience. ■

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_APPENDICES

Appendix A. *Research Activities & Classifications*

Primary and secondary research activities were conducted during each phase of this project. Primary research activities include information-gathering research activity involving the collection of either qualitative or quantitative data directly from subjects. Secondary research activities include information-gathering research activity examining topically relevant research or work previously conducted and/or published.

For the purposes of reflexive critique of the methodology used, primary and secondary research activities conducted during this research project were further classified as either emergent information-gathering or designed information-gathering.

related to the development and launch of the City of Toronto's resilience strategy as part of the 100 Resilient Cities (100RC) program as well as occupying an observational and participatory role in a diverse working research group. The research group was assembled for a project funded by the Canadian Institute for Health Research, entitled Healthy and Resilient Cities: A Connected Community Approach (2019-2020). The importance of the emergent information-gathering was not only to explore but also to stay proactive in monitoring the progression of the City of Toronto's resilience strategy and community-led resilience-building efforts as they evolved over the duration of this study.

RESEARCH ACTIVITIES	RESEARCH CLASSIFICATIONS	RESEARCH PHASES	RESEARCH ANALYSIS
Primary Activities Secondary Activities	Emergent Designed	<ul style="list-style-type: none"> Opportunity Finding Opportunity Reframing Foundational Ideation Conceptualization 	<ul style="list-style-type: none"> Litany Level System Level Worldview Level Myth Level
		<ul style="list-style-type: none"> Methods & Guiding Questions 	<ul style="list-style-type: none"> Tools, Frameworks & Techniques

Information-gathering classified as designed constituted research activities designed prior to the start of the project. Their design was predicated on a set of guiding, secondary research questions assigned to each phase of the project. The designed methods for this project consisted of a literature review, informal expert interviews, and a multi-stakeholder workshop.

Emergent information-gathering was used to classify research activities that were neither designed nor planned prior to the start of this project. These opportunities emerged from connections made at different points throughout the course of the project. The emergent methods involved participating in stakeholder engagements

Using a methodology that was inclusive of and adaptable to emergent information-gathering allowed for data coming from leading resilience-building efforts in the city of Toronto to be considered alongside other levels of data being collected in the designed methods, such as informal interviews and multi-stakeholder workshops. It allowed for the findings and contributions of this study to be designed and delivered in a way that ladders into current resilience-building efforts being led at varying levels within the city and communities of Toronto. The emergent and designed activities came together to create a culminating multi-stakeholder workshop in the final phase of the project.

Appendix B. *100 Resilient Cities Events*

Through attending, observing, and participating in three events connected to the development and launch of the City of Toronto's Resilience Strategy as part of the global 100 Resilient Cities (100RC) program, I was able to gain a better understanding of the context and intent of approaches taken when building civic and community resilience, as well as how resilience is defined in the context of equity.

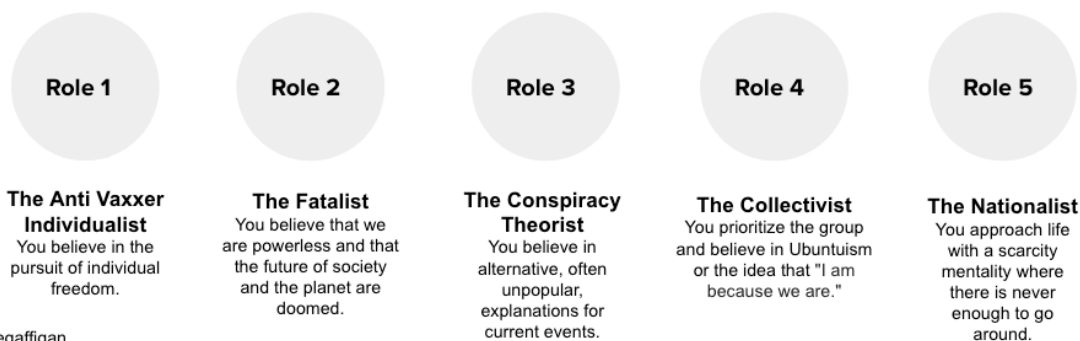
The first event occurred in August of 2018 when I co-facilitated the Stakeholder Visioning and Principle Workshop as part of a team led by Helen Kerr for the City of Toronto's resilience office as part of the development of their resilience strategy. Over 80 participants were asked to consider the current and future state of resilience in Toronto.

The second event was the launch of the City of Toronto's Resilience Strategy in June of 2019, during which Toronto revealed to the public its strategy for a resilient Toronto. As part of that event, two breakout sessions were offered to attendees. I attended the breakout session prioritizing Community & Neighbourhood Resilience where findings from the Resilience Conversation Toolkit initiatives were presented and discussed.

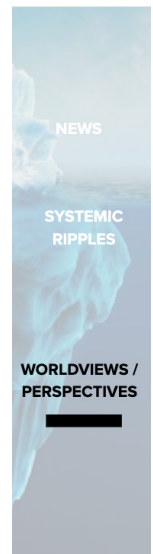
Appendix C.

MULTI-STAKEHOLDER ENGAGEMENT/WORKSHOP: *adapting the Causal Layered Analysis (CLA) foresight method*

Step 1. Each participant was assigned a specific role (worldview or perspective) to adopt for the duration of the exercise.



cc kateaffigan



Step 2. Participants were asked to read one of three short stories*, based on their assigned roles.



The workshop was hosted and facilitated virtually via Zoom (a video conferencing platform) during COVID-19 self-isolation measures. Following the exercise was a facilitated open-ended discussion on what each participant created in response to the exercise. Participants shared any changes they made to their story, along with their rationale for doing so. They also shared their headlines of the future as part of the group sharing and discussion.

Step 3.

Participants were then asked, and given time, to add to the story, or rewrite the story.

Step 4.

Upon completing revisions to the stories provided, participants' final tasks were to develop news headlines of the future to match each of their stories.

*

The short stories were built around strong causal relationships or flows and relations between macro-entities and meso-entities identified during the systems mapping process.

For example, *Short Story C* was inspired by the causal relationships of key focus areas introduced in Chapter 4, Key Findings.

Embedded Equity
Inclusive Governance
Ways of Knowing
Power Analysis

This allowed for exploration of these relationships through the use of the stories in the workshop exercise. Time permitting, more than three short stories or (adapted scenarios) could have been built out to further explore additional combinations of flows and relationships between entities depending on which area of the map we wanted to explore further.

Themes for short stories (adapted scenarios):

Short Story A

Envisioning Preferred Futures
Power Analysis
Prioritization of Justice

Short Story B

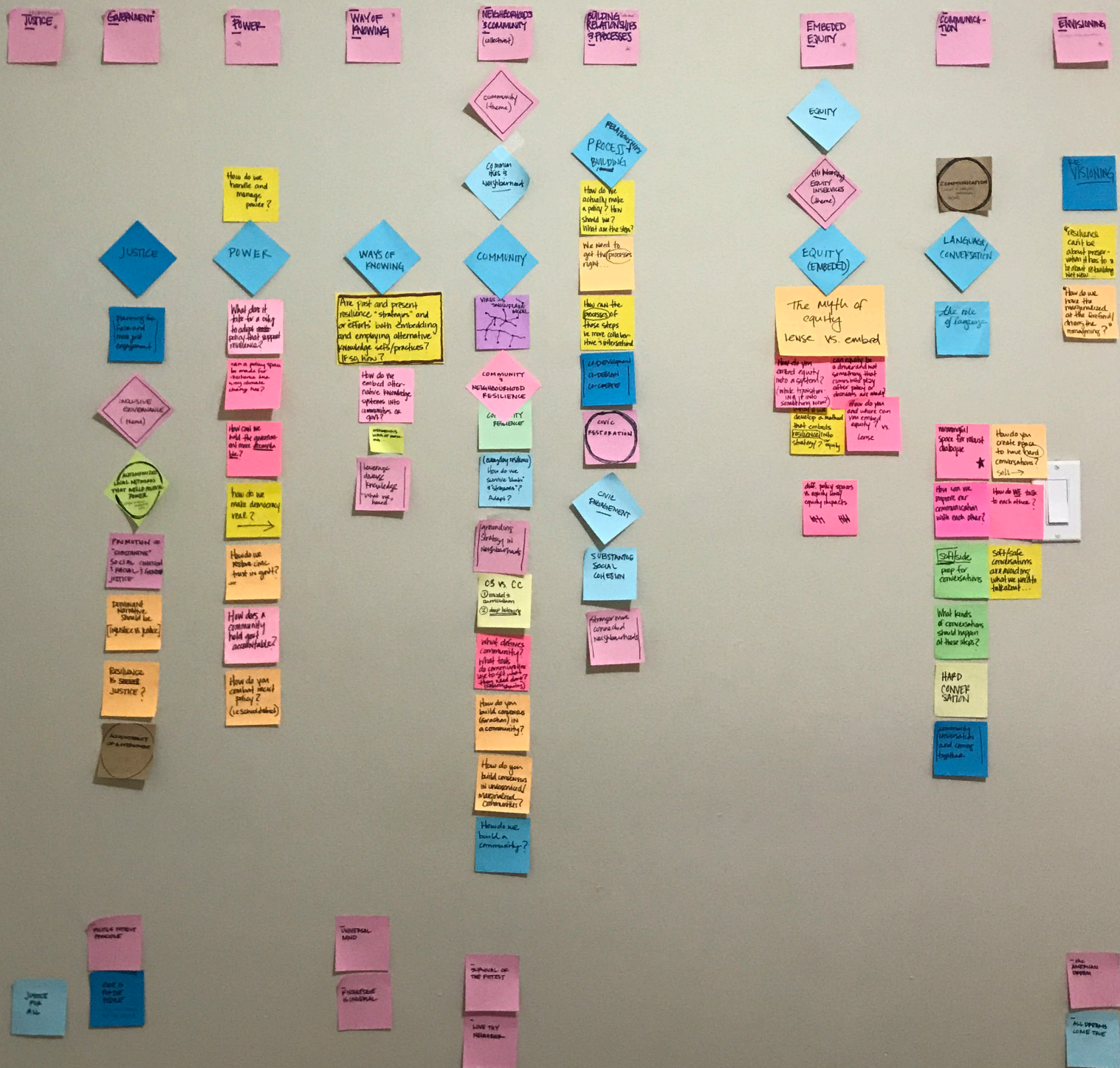
Government
Power Analysis
Prioritization of Justice
Building Relationships & Collective Processes

Short Story C

Embedded Equity
Inclusive Governance
Ways of Knowing
Power Analysis

Appendix D.

AFFINITY MAPPING PROCESS PHOTOS: *clustering of key themes*



EQUITY
(EMBEDDED)

The myth of
equity
lense vs. embed

the role
of language

How do you
embed equity
into a system?
(while transfor-
ming it into
something new?)

can equity be
a driver and not
something that
comes into play
after policy or
decisions are made?

that if we
develop a method
that embeds
resilience into
strategy? or equi

How do you
and where can
you embed
equity? vs.
lense

diff. policy spaces
vs. equity lens/
equity impacts

meaningful
space for robust
dialogue



How can we
improve our
communication
with each

Appendix E.

ERAF-G SYSTEMS MAP: *build, development & design*

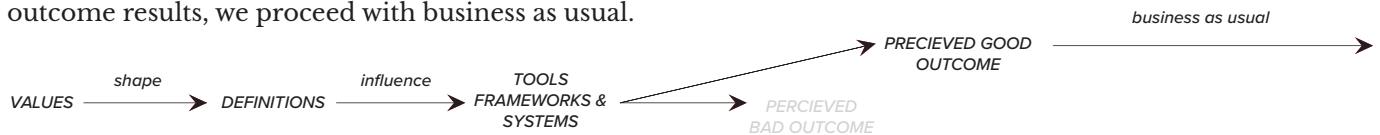
The first step in building the system map was adapting the focus areas into entities. The entities (ERAF-G) were further categorized into macro- and meso-entities to distinguish primary opportunity areas from secondary ones. The **macro-entities** were established at the center of the system map. The remaining five opportunity areas became meso-entities. These **meso-entities** were placed at the outer ring of the systems map to explore their relationships with the macro-entities that completed the center of the map. The next step in building out the systems map was assigning **attributes** (ERAF-G) to each entity, both macro- and meso-. Attributes represented inherent parts of each opportunity area and were considered as actors in the subsystem of each opportunity area (entity). The affinity mapping and clustering provided guidance in developing these attributes.

The final steps in the system mapping conducted for this study were to explore the **flow, relations** and **gaps** that existed between the entities. Flows are characterized by the “directional relations between entities and can take two forms: temporal flows and process flows” (Kumar, 2013, p. 147). Relations, in the context of this project, describe how entities connect to one another and describe the nature of connection (Kumar, 2013). Gaps for the purposes of this study are to be considered areas of opportunity to be explored further within the system.

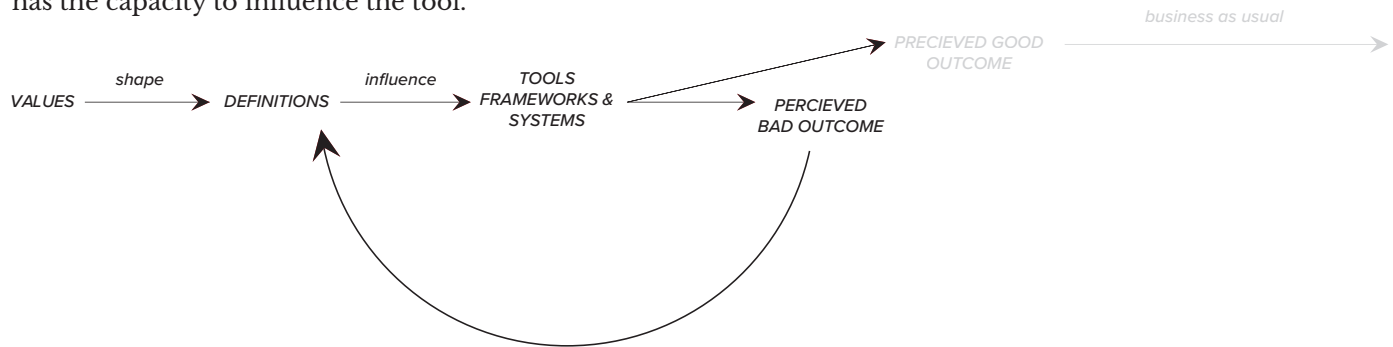
Appendix F.

REORIENTING CORE VALUES: *for the collective building of new tools*

1 Our values shape our definitions, which influence the design of our tools. If a suitable or perceived good outcome results, we proceed with business as usual.



2 But if an unsuitable or a perceived bad outcome results, we resort to refining the definition which then has the capacity to influence the tool.



3 Research suggests that the rate at which definitions are refined is outpacing the creation of tools required to respond to a given definition. The evolution cycle of definitions is essentially outpacing the tools, frameworks, and systems evolution cycle. When we actively bypass *what we build and how we build it* we reinforce values in place and forfeit the opportunity to reorient net new core values.

