Designing with Grief: The PACER Framework for Systemic Practice

Towards Post-Biological Systems of Care, Memory, and Connection

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ABSTRACT

This Major Research Project investigates grief as a systemic infrastructure that might shape whether institutions adapt, fracture, or renew. Through an integrative review across biology, psychology, culture, and systems theory, combined with reflective practice and case vignettes, I develop a Grief-Informed Futures + Design framework and a six-step PACER (**Pace, Affect, Culture, Ecology, Resilience**), process that could guide practitioners from sensing signals of loss to testing proportionate responses in policy, services, products, and places. The project asks: How might grief be treated as systemic infrastructure in design and foresight so that institutions metabolize, rather than suppress, loss. Findings suggest that grief-informed methods may strengthen legitimacy, reduce downstream costs, and improve trust and safety for people and more-than-human communities. The contribution would be a shared vocabulary, operational tools, and testable hypotheses for designers, policymakers, and community partners. I close with limits, ethical safeguards, and a research agenda that could enable empirical evaluation and co-development with affected communities.

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I acknowledge the ancestral and traditional territories of the Mississaugas of the Credit, the Haudenosaunee, the Anishinaabe and the Huron-Wendat, who are the original custodians of the land on which we live, work, and create. May we learn to acknowledge our shared humanity and connections to nature.

DEDICATION

To those we grieve, and to those who grieve us.

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Prologue:

Connecting our Inner and Outer Worlds.

I begin with the observation that our inner states do not always stay inside us. Whether it's excitement about a concert, calmness by the ocean, or stress about a deadline, what I feel and think can travel through my gestures, words, habits, and choices into my personal networks; family, friends, workplaces, streets, and servers. It is not a one-sided communication, as those worlds answer back. Between sensory inputs, communication, news, media and our surroundings, we are equally influenced by our surrounding world. Collectively, across plant, animal and human realms, our actions cascade upward into patterns that become routines, then rules, then infrastructures; and just as surely, the actions of others flow back into us as norms, incentives, built environments, and stories we learn to tell about what is "normal," "good," or "possible."

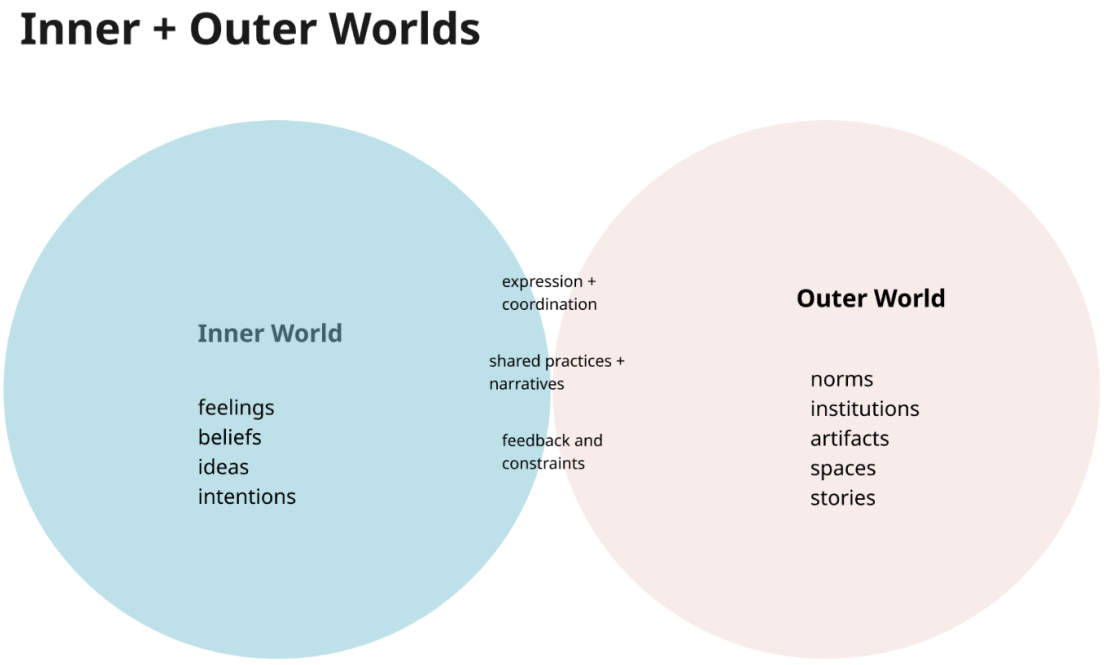


Figure 0.1: **Inner ↔ Outer.** Feelings, beliefs, ideas, and intentions meet norms, institutions, artifacts, spaces, and stories. They connect through expression and coordination, are held by shared practices and narratives, and are shaped by feedback and constraints.

This traffic between inner life and outer systems is something many scholars have tried to map. Social psychology suggests that what feels internal is often already shaped by the collective. Allport (1954) observed how judgments ride social currents, while Heider (1958) showed how we locate causes in people or situations depending on context. Tajfel and Turner (1979) demonstrated how the need to belong draws boundaries, and Festinger (1957) revealed how dissonance drives us to justify choices after the fact. Cialdini and Trost (1998) highlighted that unwritten norms can regulate behavior as reliably as formal rules. Taken together, these insights suggest that emotions and perceptions rarely remain private. Consider a workplace where silence about burnout is the norm: one person's hesitation to speak, born of dissonance and fear of exclusion, becomes mirrored by others. Soon, what began as individual discomfort solidifies into a shared culture of suppression, reinforced by norms and amplified by policies. Feelings scale when repeated, narrated, and coordinated. Under the right conditions, what begins as a hesitation or metaphor can travel outward, gaining weight until it shapes infrastructures, budgets, and the stories we come to believe about what is "normal."

In workplaces, for example, silence about burnout often starts as an inner hesitation; a fear that speaking up may mark someone as weak or replaceable. That hesitation is mirrored by colleagues, until a culture of suppression takes hold. What began as one person's unease is reinforced by group norms, codified into HR policies, and amplified by incentive structures that reward endurance over honesty. In this way, grief or fatigue does not remain an individual matter but becomes a collective practice of denial, embedded in organizational routines.

The same pattern appears in civic life. After a tragedy, the raw grief of families may spill into the streets as vigils or marches. If amplified through media or advocacy, that grief can reshape policy. Mothers Against Drunk Driving is one well-known example: what began as parental sorrow was narrated into a moral cause, scaled into lobbying networks, and eventually codified into stricter laws, roadway design, and national broadcast alerts. Here again, feelings did not stay private. They traveled outward, gathered resonance, and hardened into infrastructures that now structure everyday life.

In both cases, the mechanisms described by psychology and sociology help explain how something as fleeting as an inner state can ripple outward until it reshapes the systems we live within. What begins as a thought or emotion can, under the right conditions, scale into norms, narratives, rules, and even the built environment.

Two “appreciative” traditions help make sense of how scaling happens and how it might be redirected. Vickers’ idea of Appreciative Systems suggests that every institution carries filters, called “appreciative settings,” that determine what counts as fact, what is considered risky, and what is celebrated as success (Vickers, 1965/1968). Change the metaphor that underpins those filters, and the institution starts to notice different things. A hospital might stop asking only “Did the patient survive?” and begin asking “Did the patient feel held in dignity?” That shift seems small in language but has enormous consequences. Budgets, training, and even architectural choices can follow. Appreciative Inquiry builds on this logic. Instead of focusing only on what is broken, it uses stories of strength and possibility to guide groups into different futures (Cooperrider & Srivastva, 1987). If used critically, without ignoring harm, these approaches show how reframing from “breakdown” to “metabolizing loss,” for example, can move from dialogue into design.

Culture shapes the architecture of the whole process. In more individualistic settings, selves are often imagined as autonomous units, and influence gets attributed to personality traits. Policy in those contexts leans toward rights and “choice architectures” that assume decision-makers act alone (Hofstede, 2001; Triandis, 1995; Markus & Kitayama, 1991). In collectivist contexts, selves are understood as interdependent, woven through roles and obligations. Policy more readily targets shared norms. Indigenous worldviews go further still, placing relationality at the center, not only among people, but also with land, ancestors, and more-than-human kin. In these perspectives, identity and grief are not private possessions but movements through a living field (Wilson, 2008; Simpson, 2017). Each worldview offers a different operating system. If we begin with individuals, the default is to instrument and optimize them. If we begin with relations, the work shifts to stewardship: tending ties, repairing bonds, and honoring continuities.

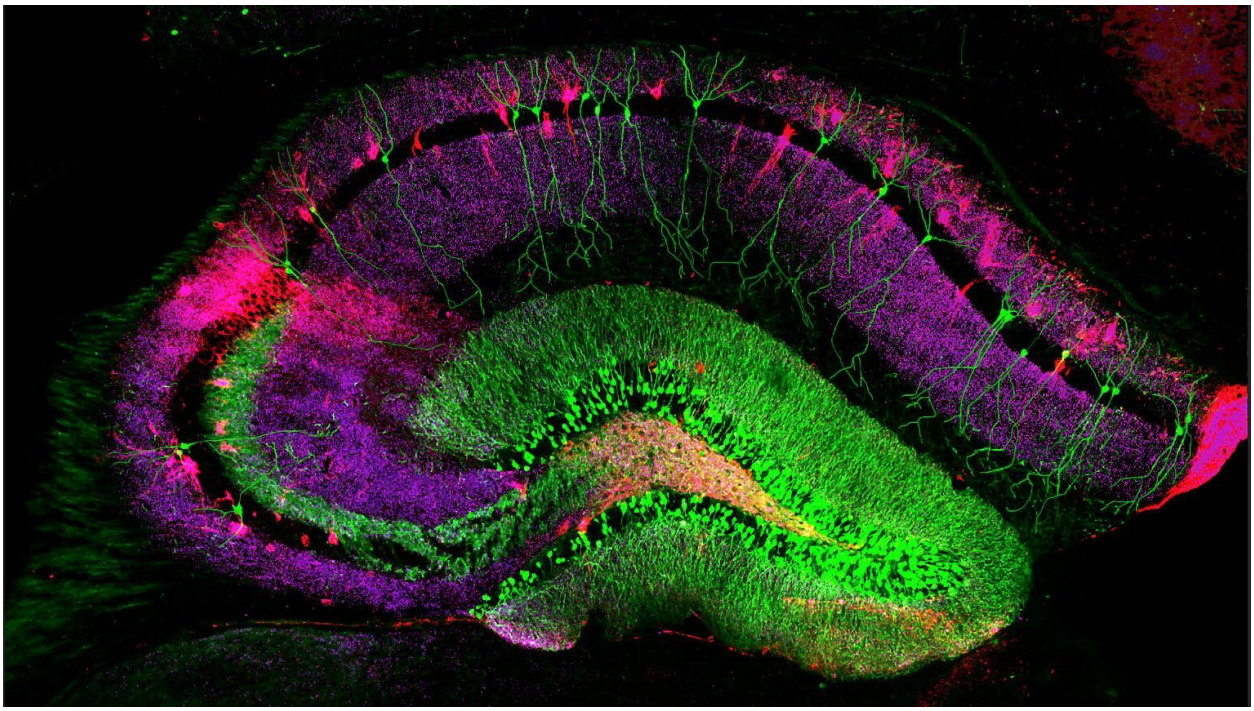


Figure 0.2 Layered architecture of the mammalian hippocampal region shown in immunofluorescence. Different color channels mark cell layers and projecting neurites, illustrating how memory-related circuits are organized; useful context for how stress and grief may alter plasticity, connectivity, and learning.


INTRODUCTION

1.0: The Impact of Emotions on Policy and Design

I have often seen emotions tip design and policy, sometimes silently, without anyone naming them. After certain shocks, grief and fear reorganize public life, not only in conversation but in architecture, law, and routine. A nation reeling from disaster might suddenly accept new forms of surveillance, new ways bodies are sorted and moved through space. The details vary, but the pattern feels familiar: an emotion charges a frame, that frame attracts narratives and coalitions, and together they travel through standards, procurement, and codebooks until they show up in the signage on a street, the script of a ceremony, or the architecture of a queue.

I do not believe grief follows a single causal law. What I have seen, however, is a pattern that repeats often enough to feel plausible.

History offers many reminders. After singular tragedies, grief and fear reshaped airport security and urban surveillance. The “broken windows” metaphor began as an essay, became policing doctrine, and eventually guided tactics that redrew budgets and neighborhoods (Wilson & Kelling, 1982). Amber Alerts began with the story of one child and scaled into national broadcast infrastructure. Climate grief, once dismissed as alarmism, became ritualized through school strikes like Fridays for Future, where absence from classrooms became presence in civic life, shifting climate from abstract science into an urgent political agenda. Whether or not we agree with each outcome, the mechanism is consistent: an affectively charged frame recruits allies, travels through institutions and standards, and eventually crystallizes into signage, scanners, rituals, or curricula.

Other emotions follow similar arcs, leaving distinct design signatures. Pride and national sentiment anchor histories in monumental architecture. Empathy and solidarity helped normalize curb cuts, ramps, and captioning until they became default features of public life. Anger and moral outrage in #MeToo reshaped HR policies and workplace protocols. Shame and disgust drove public health campaigns that redesigned cigarette packs into plain warnings and images that altered behavior. Each of these examples shows emotion not as a private inconvenience, but as a force that reshapes systems, sometimes subtly, sometimes dramatically.

If thoughts and feelings can harden into artifacts, then we carry responsibility for the metaphors we seed. Strategic foresight treats metaphors as seeds that shape which futures feel plausible (Inayatullah, 2004). Systems theory reminds me that feedbacks and delays make consequences difficult to see in real time (Meadows, 2008), and that resilience arises when systems metabolize feedback rather than suppress it (Ostrom,

2009). Indigenous teachings widen the field of consequence to include relations we too often ignore, both human and more-than-human. Cross-cultural psychology shows that our assumptions about the self, whether independent or relational, shape not only the policies we design but also the futures we expect (Markus & Kitayama, 1991; Triandis, 1995).

For me, this is less a conclusion than a reminder: emotion and metaphor are not background noise. They are the quiet engines of design, policy, and foresight. And among them, grief deserves special attention; not because it is rare, but because it is universal, and because it so often hides in plain sight.

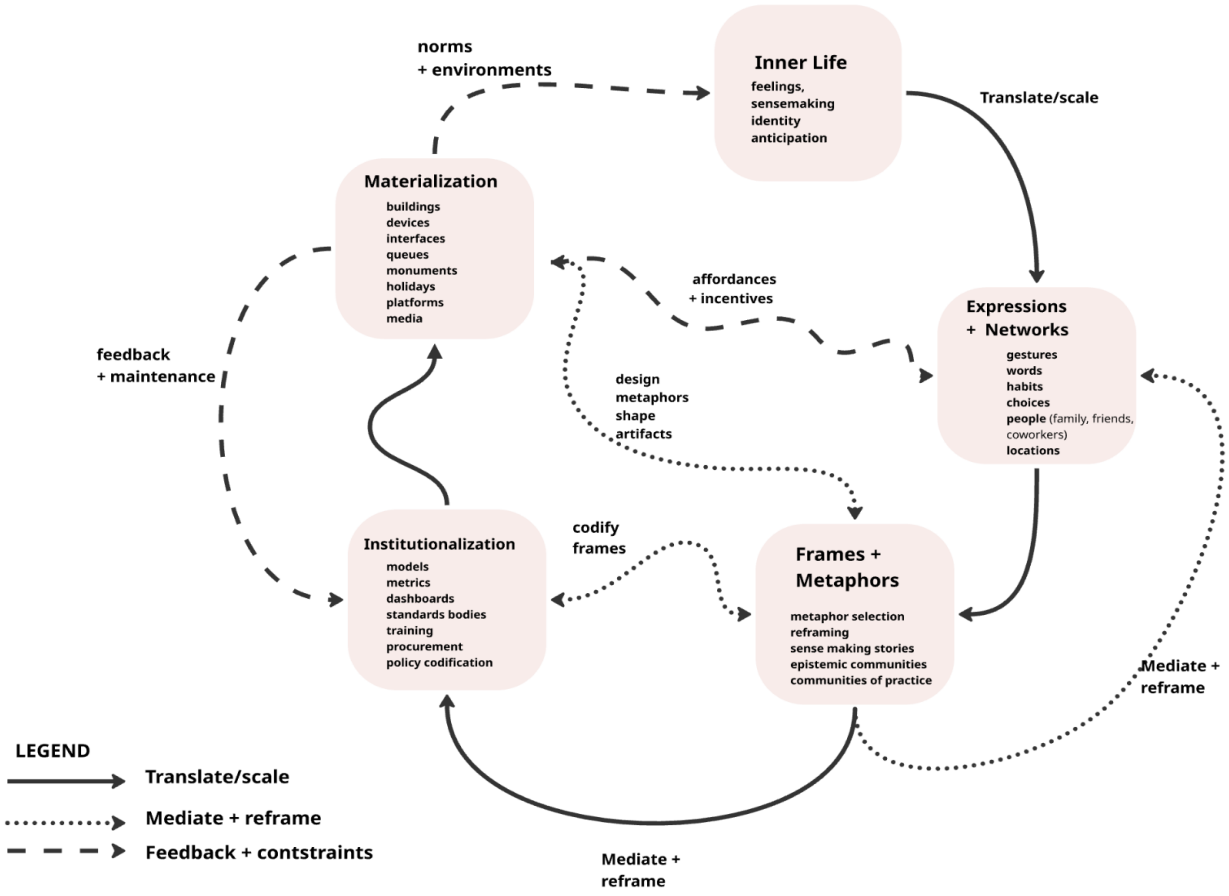


Figure 1.1: ***From Inner to Outer to Inner Again. How feelings scale into systems:*** *Inner experiences translate into social expressions, are shaped by shared metaphors, get*

codified by institutions, and materialize as places, devices, and platforms. Those artifacts feed back through norms and incentives, constraining or enabling what people feel and do.

Why center grief rather than treat all emotions alike?

Emotions of many kinds shape judgment, design, and policy, whether or not we name them. Anger can accelerate blame and fuel risk-seeking, leading to protocols that emphasize punishment and accountability (Lerner et al., 2015). Fear sharpens threat detection and heightens risk-aversion, which often shows up in the expansion of security infrastructures and surveillance systems. Joy, by contrast, tends to amplify connection and creativity: it animates festivals, playgrounds, and community rituals that make cities feel livable, often with more durable impact than top-down policy. Calm plays a quieter role, but no less influential. It underpins designs that invite reflection and trust—libraries, contemplative parks, or workplaces that prize focus over frenzy. Each emotion leaves a design signature.

Grief, however, stands apart in how it entangles time, identity, and pace. It layers past losses with anticipatory ones, making time feel nonlinear in ways that collide with institutional calendars and return-to-work expectations. It remakes relational identity, altering who I am with and to others, which shifts roles and obligations across networks. And it resists constant acceleration. Grief often requires oscillation between engagement and restoration, while institutions are usually tuned for uninterrupted forward motion. These features concentrate continuity risk: ignored grief does not simply vanish but accumulates in ways that corrode trust, legitimacy, and collective performance. Economically, grief also costs us more than anger, fear, joy, or calm, as it drives productivity losses, attrition, and hidden social burdens at scales rarely measured but profoundly consequential (Black, 2020). For example, studies of major organizations have shown that unresolved grief can increase error rates, prolong absenteeism, and push skilled staff out of the workforce entirely, creating ripple effects far greater than the short bursts of energy anger might catalyze or the stabilizing presence joy can provide. Grief also exerts costs on healthcare and legal systems, in addition to other negative externalities.

The point is not that grief is the only emotion that matters, but that it demands distinctive design responses. Joy and calm may help stabilize and inspire; anger and fear may mobilize and protect. Yet grief cuts across them, holding continuity itself in question. Small, durable adjustments to how institutions acknowledge and pace grief through recognition protocols, reflective spaces, or cadence design, can reduce error and attrition

while strengthening trust. Not every emotion travels this ladder, and not every change is beneficial, but the pathway is visible across domains. That is reason enough to justify systematic study and careful experimentation in the chapters that follow.

1.2 Framing and Defining Grief: Philosophical and Cultural Lineages

I treat grief cautiously yet directly: not as a universal explanation, but as a **lens** that can help clarify why some systems fracture under strain while others adapt. To keep claims legible and falsifiable, I define my terms, locate them across eras and worldviews, and explain why I'm using system words like *infrastructure* and *architecture* in a disciplined way.

What I mean by grief (and how it differs from other affects)

By **grief** I mean a lived disturbance of time, body, attention, and identity after an **irreplaceable** loss. From the first-person standpoint, the world no longer "holds together" as it did: sleep and appetite shift, familiar rooms feel foreign, roles loosen and seek re-linking. Grief is not only sadness; it is a **re-patterning of significance**. It often **oscillates, with** periods of intensity alternating with ordinary functioning.

Two distinctions keep the analysis clean:

- **Grief vs. regret.** *Regret* centers on **agency** and counterfactuals ("I could have done otherwise"). *Grief* centers on **irreversibility** ("the world has changed"). They can co-occur; in this research I reserve *regret* for agency-laden judgments and *grief* for non-negotiable loss.
- **Displaced grief.** Unaddressed mourning can show up as anger, worry, irritability, compulsive work, numbing, or friction-seeking, and even change the ways we interact with people, the boundaries we have, and our thresholds for pain, and happiness alike. I do not treat these as separate character flaws so much as grief wearing multiple masks (Stroebe, Schut, & Stroebe, 2007; Shear, 2012).

Eras and worldviews: how we configure grief

I have never assumed there is a single social logic for grief. What I see instead are eras and orientations, each carrying its own metaphors and defaults, each leaving behind artifacts that still shape the present. I felt it was important to understand the history of how we have

approached grief in order to understand the variety of ways we engage with it in the present day.

In pre-modern orientations, personhood was inseparable from kin, land, ancestors, and ritual. Grief was rarely hidden. It was carried together, spoken aloud, and metabolized through ceremony, season, and story. To lose someone was to enter a passage, and the point was not to "return to normal" but to be re-woven into community through rites that redistributed loss. Kellehear (2013) and Ariès (1981) remind us that mourning was less about private sadness than about re-binding the fabric of life.

Modern orientations turned the lens inward and the gears outward. Mechanistic metaphors rose, and with them a culture that prized efficiency, regularity, and control. Care and dying became professionalized, grief increasingly privatized and medicalized. Employers and institutions drew sharp lines: three days off, perhaps a counseling referral, and then the expectation of a linear return to productivity. Rieff (1966) and Illouz (2007) both trace how grief, once communal, was narrowed into a private pathology to be managed rather than a collective reality to be held.

By the late-modern and post-modern periods, grief had not disappeared but proliferated under new logics of media and platforms. Here, grief could be everywhere and nowhere at once. It might flood timelines, trending for a moment, yet be consumed at the speed of a scroll. At times, grief became a form of social capital: a post that gathered likes or sympathy but rarely altered the structures underneath. Ahmed (2004) and Papacharissi (2015) show how attention economies instrumentalize even the most intimate losses, creating cycles where visibility often comes without depth, and institutions can appear to acknowledge grief without changing anything at all.

Cross-cultural perspectives complicate and enrich this picture. In more collectivist settings, grief is encoded in shared obligations and communal practices. In more individualist ones, it tends to be encoded in choice architectures tailored to autonomous decision-makers (Triandis, 1995; Markus & Kitayama, 1991; Hofstede, 2001). Neither is static, and both reveal biases about what a self is and how loss should be carried. What individualist contexts often miss is that grief is not a defect but a tutor in the art of living.

This is not a new idea. Aristotle noted that the people we meet and inevitably lose illuminate the goods that sustain a life, and that the polis is pressed to honor them through memory, ritual, and just institutions (Nicomachean Ethics, 2009). In the Bhagavad Gita, Arjuna's grief and paralysis become an apprenticeship in impermanence and duty (Radhakrishnan, 1993). Confucian thought makes mourning a civic practice in its own right

(Analects, 1998), while Zen turns attention to grief as the very cadence of impermanence (Kasulis, 2002). Taken together, grief appears less as an interruption and more as a covenant binding people to memory, ecology, and society.

Many Indigenous worldviews carry this further. Grief is not only about people but about more-than-human ties. It is work of continuity: repairing bonds with ancestors, land, rivers, animals, and future generations (Wilson, 2008; Simpson, 2017; Kimmerer, 2013). These orientations need not align perfectly with individualist or modern frames to be instructive. They remind me that grief can be structured in ways that sustain cadence: acknowledgment, return, seasonal pause. Relational traditions offer repertoires that our current institutions too often lack.

Why I use "infrastructure" and "architecture" (and how I'm using them)

Because I use system language in this research paper, I define it narrowly and contrast it with established meanings. In Socio Technical Systems (STS) and information studies, infrastructure is the often-invisible relational substrate that enables action, learned as part of membership and revealed by breakdown (Star & Ruhleder, 1996; Bowker & Star, 1999; Larkin, 2013). I use a modest operational sense: the durable supports and cadences that keep collective activity possible. Examples include leave and return policies, handover rituals, memorial protocols, service hours, and data rules that prevent grief erasure. I am not claiming grief is infrastructure in the full STS sense. I am arguing that grief-literate supports and cadences function infrastructurally because they quietly bear load and enable continuity.

Architecture in buildings and computing denotes the arrangement of parts into a coherent whole and the high-level organization of a system (Alexander, 1977; Garlan & Shaw, 1993). I use architecture to mean the patterned arrangement of roles, rules, rooms, rhythms, and interfaces, similar to choice architecture. A grief-aware architecture allows oscillation, for example approach and withdrawal, rather than assuming constant flow. When more precise terms are useful, I also refer to institutional arrangements, operational scaffolds, ritual repertoires, cadence design, and sociotechnical routines.

In Summary

My working hypothesis is restrained: grief **may** scale beyond private feeling; small, well-designed **supports and cadences might** reduce error and attrition while improving trust and continuity; ritual repertoires from relational traditions **could** enrich mainstream institutions without large new expenditures. The chapters that follow specify measures and interventions and invite readers to test where this frame holds, and where it does not.

The aim is not to elevate grief above all else, but to use it as a **lens** for designing systems that remember, learn, and endure.

1.3 Personal Entry Point

My education in grief began while I was growing up in Dhaka, where rupture and resilience share a tea stall. Partition in 1947 displaced millions (Talbot & Singh, 2009). The 1971 Liberation War further scarred the people of the nation, even as architecture and art became acts of repair. I remember light falling through brick at the Parliament complex, rickshaw art turning traffic into a moving gallery, cricket in narrow streets, vibrant local music scenes, the call to prayer folding the day into a rhythm older than the city. Monsoon water rose and neighbors checked on neighbors. The city ran on ingenuity, spice, and stubborn hope. Abroad, Bangladesh was often flattened into a single story of disaster that erased creativity and dignity (Haque, 2019). That erasure is a grief of its own.

Moving to Canada, I met different griefs. The legacies of colonialism and residential schools remain active (TRC, 2015). Towns hollowed by industrial decline carry alienation that shows up in health and politics (Russell, 2019). Climate grief arrives with fires and floods (Cunsolo & Ellis, 2018). These forces shape intergenerational memory and disparity (Palmater, 2011; Coulthard, 2014).

Between Dhaka's monsoon resilience and Canada's contested memory I learned to recognize grief when it showed up as signal, or a hidden driver. I heard it in boardrooms after failed mergers, in neighborhoods displaced by development, and in cultural institutions mourning fractured lineages. Multiple actions in the current climate of geopolitics can be read as grief over belonging and sovereignty (Alexander, 2012).

My grandfather in particular taught me how to listen. He bought what felt at the time like every newspaper he could find in Dhaka and stacked them beside him on his table, along with toast biscuits and a cup of tea. "If I read them all", he would say, "I might get half the truth. The other half lives between the versions, on the streets, in water cooler conversations, tea stalls, our art and in our underground and popular culture. That habit became a mental hygiene practice for me. Read across perspectives. Check the metaphor. Listen for what is missing. The same practice is required by design, whether designing for grief or any other emotional state.

1.4 From Design to Futures

Design trained me to notice what a system seems to privilege. In practice, the field often prizes novelty and speed, sometimes at the expense of care and maintenance. I try to hold a wider view. Design may be stewardship as much as invention, attention as much as acceleration. In that register, grief became a tutor. It helped me surface harm across industries and sectors that had been normalized, clarify the values a system actually protects, and notice where renewal might begin.

Artificial intelligence appears to raise the stakes. Models trained on partial histories can scale exclusion quickly, turning yesterday's blind spots into today's infrastructure (Baerg et al., 2024). In machine-mediated, post-biological contexts, unacknowledged grief may automate erasure at scale. My countermeasure is what I call systems hygiene. I use it to mean practical disciplines that keep memory and consent alive in everyday work: protocols for meaningful consent and data sovereignty, especially where Indigenous communities are concerned; provenance and audit trails that make training data traceable; pacing that matches human bodies and cognitive load; and small, routine practices of recognition and repair, such as check-ins, handovers, and memorial protocols. None of this is dramatic. It is ordinary, repeatable care that, over time, might let systems carry loss without losing function.

1.5 Research Question and Contribution

I noticed that grief can occupy a lot of our time, whether tended to or not. After seeing numerous companies, individuals, and communities be hindered from reaching their full potential due to dealing with grief in inefficient ways, I sought to understand how we might design our lives in ways that honour our physical and mental health, as well as the health of the natural ecosystems we rely upon. This led to me to a relatively simple research question in the grand scheme of things, but one that has significant potential for societal improvement and cost savings.

Research question.

How might we improve the design of present and future systems through a deeper understanding of grief?

A paired question follows, given the prevalence of artificial intelligence and its adoption across most major industries.

How might we design for post-biological systems when we have not yet designed well for human ones?

Contributions

My contributions through this research may be described in four main forms.

Theoretical. I suggest positioning grief alongside trust, memory, and energy as a foundational societal input. Like these other forces, grief is not optional. It is always present, whether acknowledged or suppressed, and it quietly influences the stability and legitimacy of systems.

Methodological. I propose reflective practice as a form of systemic inquiry. By holding theory and practice together, this approach makes it possible to follow grief across scales: from the individual body to the organization, and from cultural rituals to civic infrastructures.

Topical. I surface Indigenous, global, and cultural practices not as peripheral traditions but as design resources with enduring relevance. They remind us that grief has long been metabolized communally, ritually, and ecologically, and that institutions often weaken themselves when they ignore this.

Paradigmatic. I suggest shifting foresight metaphors from mechanical to biological. Rather than thinking only in terms of efficiency and repair, I emphasize cadence, adaptation, and regeneration (Capra & Luisi, 2014; Meadows, 2008). This reorientation opens space for futures work that may be more ecologically realistic and emotionally literate.

Inner states can circulate into gestures, choices, and policies. Actions shaped by emotions, metaphors, culture, and biology may cascade upward into rules and infrastructures, which then flow back into us as environments, incentives, and norms. Because this traffic follows patterns, it may also be designable. Choosing different metaphors such as “garden” instead of “machine” or “metabolize” instead of “mask,” and beginning from relational rather than purely individual ontologies, could generate different models, metrics, and mandates. Those choices eventually show up as different chairs, clinics, classrooms, and streets.

Designing with bodies, emotions, and relations in view is not sentimentality. It may be understood as systems-oriented, biologically realistic, and policy-relevant. It

acknowledges that the architectures of work, policy, and platforms already carry emotional load, and asks how we might carry it with intention rather than by accident.

What follows builds on these premises. I treat grief not as a private defect to be hidden or endured, but as both signal and material within living systems. By tracing how frames travel, how bodies fare within architectures, and how cultures tune attention, I aim to show how small shifts in language can lead to large shifts in practice, and how we might choose frames that help institutions metabolize rupture rather than collapse under it.

Chapter 2 outlines the methodological ecology that makes grief legible as a driver of design and policy. Chapter 3 synthesizes intellectual lineages and identifies blind spots. Chapter 4 surfaces practice-based findings across domains. Chapter 5 presents the PACER framework. Chapter 6 names limitations and future directions.

The through line is that designing with grief is not about adding another program or policy layer. It is about weaving grief-awareness into the cadence of work, governance, and design so that continuity becomes a reliable outcome. By “cadence” I mean the rhythms, pauses, and patterns that already shape collective life: meeting schedules, policy cycles, school calendars, ritual observances. If those cadences acknowledge grief, they support adaptation; if they deny it, they amplify risk. The contribution of this research is to show that grief can be designed with, not designed out, and that doing so may yield futures that are both more resilient and more humane.

CHAPTER TWO

METHODOLOGY

2.1 Methodological Positioning: Reflective Practice with Reflexive Awareness

I adopt a reflective methodology grounded in practice-based inquiry. By reflective I mean a systematic return to my own professional work as data: transcripts, field notes, design artifacts, and immersive installations become sites for theorizing how grief might operate across governance, healthcare, cultural, and civic contexts (Schön, 1983; Kolb, 1984; Gibbs, 1988). Reflection helps me learn from practice-in-action and to notice grief as a possible hidden driver rather than a background feeling.

Reflexivity complements this stance. I locate myself as a Bangladeshi-Canadian systems designer and cultural practitioner, and I treat my values, histories, and blind spots as active variables in knowledge production (Finlay, 2002). I keep an audit trail of decisions, memo my assumptions before key analyses, and invite challenge from collaborators who hold different positions. The goal is not neutrality but accountable interpretation.

Grief may resist reduction to linear protocols or mechanical measurement. It seems to pulse across physiology, psychology, and ecology in ways that slip easy compartmentalization. I therefore frame this study as an ecology of methods: diverse tools, one unifying question. In each setting I ask, “How might grief be operating here, and how could that inform futures and design choices?”

This stance also invites me to question dominant design paradigms that privilege efficiency, profit, and control at the expense of biology, ecology, and care. Many of our policy and economic discourses lean on metaphors of war or zero-sum competition. We speak of “fighting” poverty, “combating” climate change, or “winning” market share, as though every domain of life were a battlefield where one actor’s gain requires another’s loss. These frames may sometimes create urgency, yet they also flatten complexity. They obscure the feedback loops that sustain resilience, such as the way rest supports performance, or the way biodiversity maintains stability in ecosystems. By casting every challenge as an opponent to defeat, these metaphors leave little room to imagine cooperation, reciprocity, or regeneration as credible design choices.

Systems perspectives suggest other ways of seeing. A socio-technical lens emphasizes the interaction between human behavior and material technologies. It reminds us that infrastructure is never neutral: scheduling software or triage protocols quietly shape whether grief is recognized, minimized, or shared. A socio-psychological lens highlights how identities, norms, and relationships influence what is considered grievable, and how stigma or silence can corrode trust and capacity. A socio-ecological perspective situates

human systems within larger living systems, where grief is not simply a private emotion but a sign of disconnection from ecological relations, whether in the loss of salmon in a river, the disappearance of a language, or the quiet despair of young people facing climate collapse.

Together, these approaches offer an alternative to mechanistic frames. They invite us to see grief not as inefficiency to be eliminated but as signal and feedback, a force that reveals when continuity is under strain and where adaptation is required.

Bias, lens, and falsification

I recognize the risk that a "grief lens" could harden into ideology. I did not begin with it. Across projects, grief surfaced in interviews, workshops, and client meetings often enough that I was surprised more organizations did not have grief informed policies to help address performance and productivity issues as well as easily avoidable workplace accidents.

To keep the lens from drifting into dogma, I balance reflection with reflexive accountability and clear tests. I ask first what non-grief mechanisms could explain a pattern and I record null cases where grief does not appear to matter (Finlay, 2002). I treat disconfirmation as informative, consistent with a falsification stance adapted for qualitative work (Popper, 1959; Maxwell, 2013).

I also use practical guardrails against confirmation bias. I maintain an audit trail of analytic decisions and sampling choices (Yin, 2014). I triangulate across methods and data types so no single source carries the argument (Patton, 2002; Miles, Huberman, & Saldaña, 2014). I pre-specify simple checks such as "if cadence adjustments show no effect on error or retention in comparable contexts, retire the claim," and I seek disconfirming evidence by design (Nickerson, 1998). I code "grief" only when explicit criteria distinguish it from stress, regret, or general dissatisfaction, and I log base rates and null findings so absence remains visible. These steps do not remove bias, but they make it inspectable and keep the lens provisional, which is the standard I aim to meet.

2.2 Methods and Techniques

To observe grief across biological, cultural, and systemic scales, I draw on six clusters of methods. Each illuminates a different facet; together they form a mosaic. I work abductively, moving between data and theory, and I triangulate across methods to reduce

the chance that any single lens dominates (Timmermans & Tavory, 2012; Schwartz-Shea & Yanow, 2012).

Why this mix might work.

Systems and foresight help reveal patterns and timing. Behavioral tools help trace how loss shapes everyday choices. Indigenous and decolonial protocols keep consent, reciprocity, and limits visible. Immersive design lets people feel complex systems. Reflexive practice holds my own position to account. In combination, these approaches have informed my work and allow me to study grief as a driver and design issue alike rather than only as an individual emotion.

1) Systems and Foresight Frameworks

- **Causal Layered Analysis (CLA).** I surface grief at four levels: burnout headlines at the litany, bereavement policy gaps at the system, productivity-before-humanity at the worldview, and myths of grief as weakness at the myth/metaphor level (Inayatullah, 1998).
- **Systems archetypes.** I map recurring loops such as Fixes that Fail, Tragedy of the Commons, and Success to the Successful, for example wellness programs without bereavement leave, caregiver burnout, and grief being most ignored in marginalized groups (Senge, 1990).
- **Anticipatory systems.** I treat grief as orientation toward absent futures, for example climate activists pre-grieving ecological collapse (Poli, 2010).
- **Foresight tools.** I use STEEPLED scanning, Three Horizons, and experiential futures to situate grief across past trauma, present rupture, and anticipatory loss (Sharpe, 2013; Candy & Dunagan, 2017).
- **Activity theory.** I use Cultural-Historical Activity Theory to show how contradictions in roles, tools, and rules can surface unresolved loss that blocks learning (Engeström, 1987).
- **Panarchy.** I locate grief within adaptive cycles of growth, conservation, release, and reorganization. Grief often corresponds to the hinge between release and renewal (Holling, 1973; Gunderson & Holling, 2002).

Purpose. Reveal grief as feedback loop and anticipatory signal, and shift foresight metaphors away from mechanistic control toward biological and ecological adaptation.

2) Behavioral Economics Tools

Using **MINDSPACE** (Dolan et al., 2010), I analyze how grief may shape micro-choices:

- **Messenger.** Legitimacy seems to shift depending on who names grief, for example CEO compared with junior staff.
- **Norms.** Local culture appears to determine whether grief is surfaced or suppressed.
- **Salience.** Ritualized and accessible environments can change what people notice and how they belong.

Purpose. Show how loss might steer everyday behavior as much as macro-systems, often quietly.

3) Immersive and Design Methods

While immersive work was not undertaken for this paper, I researched immersive installations and design methods, including take a retrospective look at Space or Grief, and We Remembered You, Too; two installation series I co-founded with the intention of making systemic information about grief and memory publicly accessible. The purpose of this was to understand how to improve learning outcomes, emerging methods of education,

- **Journey mapping.** I track emotional atmospheres such as alienation or welcome beyond formal process maps.
- **Co-design workshops.** I invite participants to legitimate grief as a creative catalyst in cultural and civic settings.
- **Immersive prototypes.** In projects such as Space for Grief, I translate systemic insights into embodied, sensory form so participants can walk through metaphors rather than only read about them.

Purpose. Make systemic grief tangible and learnable. Move from abstraction to lived pedagogy and embodied futures practice.

4) Cross-Cultural and Decolonizing Methodologies

- **Sôhkêpayin Guide protocols.** I emphasize Indigenous data sovereignty and relational accountability (Baerg, Hossain, Rawlings, Lee, Dimachk, 2024).
- **The Four Rs.** I frame knowledge ethics through Respect, Reciprocity, Relevance, and Responsibility (Kirkness & Barnhardt, 1991).
- **OCAP® principles.** I follow Indigenous data governance norms on ownership, control, access, and possession (FNIGC, 2019).
- **Relational methods.** I engage with Indigenous and Ainu practitioners to treat knowledge as relational rather than extractive (Wilson, 2008).

Purpose. Study grief as relational infrastructure across cultures and species, not as pathology or deficit.

5) Policy and Comparative Research

- **Comparative bereavement policies.** I review policy variation and gaps across jurisdictions.
- **Organizational practices.** I compare HR routines and incident patterns in grief-aware and grief-denying settings.

Purpose. Estimate economic and governance implications and examine whether efficiency without empathy correlates with long-term brittleness.

6) Reflective Corpus of Practice

I return to my project transcripts, notes, photographs, and design outputs from governments, NGOs, health institutions, arts organizations, sports ecosystems, and climate movements. I treat this corpus as a longitudinal, multi-site record of how grief may appear in real work. I sample for **maximum variation** across roles and lived conditions so that no single group is privileged as the default witness of grief's effects. I include executives and frontline workers, elders and youth, salaried professionals and precarious workers, migrants and long-settled residents, people with disabilities, caregivers, students, and organizers across urban, suburban, and rural contexts. I attend to gender, race, class, and immigration status where participants chose to share those identities. I do this because grief has seemed universal in reach yet uneven in exposure and resource buffers, and because its arrival is unpredictable across the life course.

Analytically, I create structured case vignettes, code for patterns of rupture and repair, and compare across sectors for recurring mechanisms. I memo where my interpretations might be colored by role proximity or aesthetic preference, and I check critical claims with collaborators or participants where consent permits. I triangulate these narratives with policies, artifacts, and environmental cues to avoid over-relying on any one voice. My aim is to honor heterogeneity while still proposing patterns that others can test.

Purpose. Situate grief across life stages, power scales, and cultural contexts, and examine whether it functions as a systemic variable rather than only a private feeling.

2.3 Diversity and Equity Strategy

I use a **maximum-variation sampling** approach to balance breadth and depth (Patton, 2002). This aligns with Toronto's **Data for Equity** guidance, which emphasizes disaggregated data, inclusive sampling, and attention to systemic inequities affecting Black, Indigenous, racialized, 2SLGBTQ+, newcomer, and disabled communities. In practice this means purposive outreach to under-represented groups, optional demographic self-identification, and coding that preserves intersectional detail where consent allows. I pair these steps with clear limits on inference. Findings are framed as plausible mechanisms rather than universal laws, and I invite replication and critique.

2.4 Synthesis and Reflection

I close this chapter by stepping back. The methods I used were disparate by design, whereby each one seemed to offer a shard of a full picture. CLA helped me see myths and metaphors that sit beneath policy talk. MINDSPACE drew my attention to small choice cues that might steer behavior when people are grieving. Indigenous protocols grounded the work in relationship and responsibility. Immersive prototypes let participants feel complex systems in their bodies. Activity theory surfaced contradictions inside institutions. Panarchy and anticipatory systems situated grief in cycles of release and renewal. None of these was sufficient alone; together, they began to answer a single question that guided my practice throughout: how might grief be operating here, and how could that inform futures and design choices.

Coherence, for me, came from the lens rather than from uniformity. I moved abductively between data and theory, allowing each method to critique the others. When a workshop story felt compelling, I checked it against organizational routines and artifacts. When an index or policy looked clean on paper, I walked the space or built a quick prototype to test how it felt. When CLA suggested a dominant metaphor, I asked whether a behavioral cue or a small ritual might shift attention in practice. In this way, the methods informed one another. Patterns that appeared across tools were treated as stronger hypotheses. Single-tool claims were treated as tentative and marked for further testing.

I tried to keep the limits in view. CLA can privilege interpretive flourish if it is not tied back to observable routines. MINDSPACE risks shrinking grief to a set of nudges if it is not placed in a wider social and cultural field. Immersive work can privilege those who are present and comfortable in sensory environments. Cross-cultural protocols require time,

trust, and restraint, and insights may not transfer outside the relationships that made them possible. Comparative policy review is only as good as the public data it draws on. A reflective corpus risks confirmation if I do not invite challenge. To counter these tendencies, I triangulated across sources, kept an audit trail of decisions, and used member checking and peer debriefs where consent allowed. I also note where other methods could extend the work. Longitudinal diaries, physiological measures of recovery, natural experiments around scheduling, social network analysis of support ties, and agent-based simulations of organizational cadence could all deepen or contest what I report here.

Sampling and validity follow the same spirit. I used maximum-variation sampling to favor breadth over claims of universality. That meant choosing projects and roles to research across roles, sectors, and lived conditions, and attending to race, gender, class, disability, and immigration status where participants chose to share. The goal was to avoid privileging any one group as the default witness of grief. Validity rests on triangulation across methods, cross-sector echoes, and member checking where appropriate. Limits and bias controls are detailed in Appendix E.

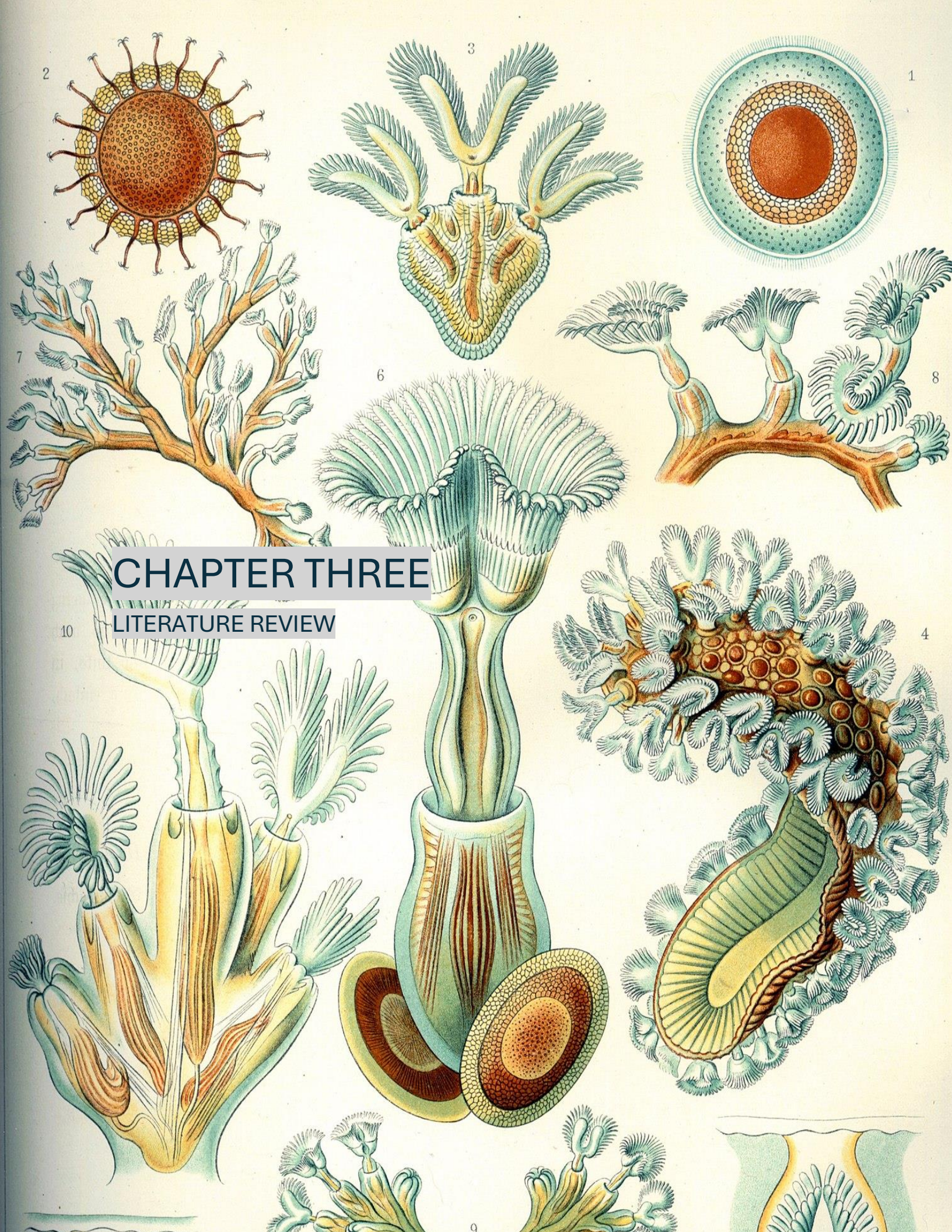
I did my best to treat Ethics as a method. In each of the projects studied, consent was ongoing rather than one-time. Some knowledge remained restricted and is referenced only at a high level. No sacred protocols are described. I followed research ethics board standards, respected Indigenous governance protocols including data sovereignty, and honored contractual boundaries.

What, then, does this methodological ecology suggest? First, context seems to matter. Not all tools surface grief in the same way, and resonance appears to depend on audience, culture, and setting. Second, grief may be both object and method. It is something to trace across systems, and it is also a lens that can guide design toward humane, adaptive, and life-centered futures. Third, small connections across methods may be more powerful than large claims within any single one. A co-designed ritual might reinforce a policy change; a cadence adjustment in scheduling might give a new training program room to take hold; a shift in metaphor might make a checklist readable to the people who need it most.

If there is a practical takeaway, it is cautious and testable. By treating grief as a tangible factor in how systems keep continuity, and by using methods that speak to psychological, technical, and ecological dynamics together, we may be able to design for rhythm, repair, and regeneration rather than for speed alone. Where I fell short, I try to name it. Where the

data points are thin, I mark them as hypotheses. The point is not to claim final answers, but to assemble a clear starting platform that others can contest, extend, and adapt.

This reflection sets the stage for Chapter 3. There, I gather the disciplinary literatures that can help formalize the patterns glimpsed here and begin to build the conceptual scaffolding for the PACER Futures + Design framework.



CHAPTER THREE

LITERATURE REVIEW

3.1 Introduction

When I began this research, I suspected grief could not be understood inside a single discipline. I kept encountering it in courts adjudicating damages, in community consultations about redevelopment, in arts organizations mourning cultural loss, in climate movements shaped by anticipatory sorrow, and in debates on AI and data ethics. Each field named grief differently, or avoided naming it at all. Some framed it as psychology, others as sociology, pathology, inefficiency, or simply "background."

I therefore treated the literature review as inquiry rather than ornament. My aim is to listen across disciplines, notice what they illuminate about grief, and attend carefully to what their silences may conceal. I organize this listening with cautious questions that a skeptical reader might ask:

- What appears to precipitate grief, and what functions might it serve?
- How is grief lived biologically, psychologically, socially, and culturally?
- How do organizations and communities seem to absorb or fail to absorb grief?
- How might philosophical, Indigenous, and global traditions reframe grief as a civic and ecological concern rather than a purely private mood?
- What lessons from these literatures could inform future design choices?

Where this study sits

Clinical grief studies describe symptoms, courses, and coping. Design scholarship focuses on process but often sidelines difficult affect. Foresight maps scenarios but rarely centers feeling. Trauma-informed work prioritizes safety and stabilization. My contribution is more modest and complementary: I treat grief as a continuity variable that may shape how systems keep working after rupture, and I translate that possibility into small, testable supports and playbooks, including AI guardrails that help prevent automated systems from misclassifying mourning as low value. The claim is exploratory and will be argued with care.

How my professional experience and training inform this review

I arrived at this topic by way of practice rather than theory. My work has sat at the intersections of systems thinking, foresight, design, and culture, which has exposed me to more complexity than I sometimes wished for. The breadth of that exposure may explain why this review looks wide angled. It seemed necessary. Courts adjudicating damages, civic consultations on redevelopment, arts organizations mourning cultural loss, climate

coalitions living with anticipatory sorrow, and debates about AI ethics all appeared to be circling versions of the same question without naming it in the same way.

My training and roles shaped both the question and the methods. Formal study in economics, political science, and employment relations, with additional certificates in biotechnology and business analysis, trained me to look for incentives, rules, and unintended effects. Professional work across national courts, health agencies, shelter networks, sport systems, and cultural institutions suggested that legitimacy, belonging, and continuity might hinge on how loss is handled. International and Indigenous partnerships reinforced a relational view of knowledge and responsibility. Academic collaborations helped translate practice into inquiry. Entrepreneurship with Method Collective gave me a place to test ideas in real projects. The Space for Grief initiative pulled these threads together as a live prototype and suggested that grief could be treated as a civic concern rather than only a private feeling.

My parallel life as a musician and visual–sound artist informed the approach as well. Performing, composing, and building immersive installations trained my attention on cadence, sensory load, and the difference between what a system says and how it feels. Contributing to audio product design sharpened habits of iterative prototyping and usability testing. These experiences encouraged me to include embodied and experiential methods alongside analytic ones.

Taken together, this background led me to a reflective and reflexive methodology. I work abductively, moving between field notes, transcripts, design artifacts, and literature to propose mechanisms that seem plausible and test where they hold. I use systems and foresight tools to see patterns and timing, behavioral tools to observe micro choices, participatory and immersive methods to make complex dynamics felt, and cross-cultural protocols to keep consent and reciprocity visible. I chose maximum variation sampling because grief appears universal in reach yet uneven in exposure and resource buffers. I did not want to privilege any single role, demographic, or sector as the default witness.

I also recognize likely biases that follow from this trajectory. A systems lens may overemphasize pattern over particularity. An artistic practice may pull me toward aesthetic coherence. Work concentrated in urban and institutional settings may tilt attention toward formal organizations and English-language sources. Advocacy for humane design may bias me toward finding what I hope to find. To mitigate these risks, I kept an audit trail of decisions, wrote reflexive memos before major analyses, triangulated across methods and data types, sought disconfirming cases, used member checking and peer debriefs where

consent allowed, and marked thin or speculative findings as hypotheses rather than conclusions.

This vantage does not deliver definitive answers. It does, however, suggest a way to listen across disciplines for how grief might operate in real systems and how small, practical adjustments could make continuity more likely. The literature review that follows reflects this stance. It treats experience as a source of questions, not proof, and it invites readers to interrogate where the patterns fit their contexts and where they do not.

How I organize the review

Rather than march discipline by discipline, I synthesize around five meta-themes. I avoid treating grief as a monolith and focus on patterns that different literatures seem to converge on.

1. **Grief as biological and psychological process**
   What is happening to time perception, attention, sleep, and stress regulation, and how might those changes affect judgment and performance?
2. **Grief as social and cultural practice**
   How do norms, rituals, and narratives distribute grief across families, workplaces, and publics, and how do those practices appear to change outcomes?
3. **Grief as philosophical and ethical problem**
   What duties, virtues, or obligations do traditions propose around loss, and how might those frameworks guide collective responses?
4. **Grief in systems and anticipatory perspectives**
   How does grief relate to feedback, adaptation, and temporality in complex systems, including anticipatory grief in the face of ecological and technological change?
5. **Grief in design and operational patterns**
   Where do spaces, schedules, tools, and roles appear to acknowledge or ignore grief, and what practical adjustments seem to matter?

Across these themes, a consistent pattern tentatively emerges. Grief destabilizes and can also sustain. It seems to corrode when denied and to regenerate when recognized with proportionate practices. The chapters that follow map the evidence behind that pattern, note where it does not hold, and suggest specific places where careful design might make continuity more likely without grand programs or grand claims.

*Figure 3.1 C***ross-disciplinary infographic** showing how biology, culture, systems thinking, language, economics, technology, design, Indigenous practice, and ethics all supply the feedback and rituals that determine whether grief is seen, supported, and turned into learning.

3.2 Grief as Biological and Psychological Processes

Why I looked here

To ground a systemic account, I began with the body. I wanted to understand what grief might do physiologically and psychologically. I asked how it may shape cognition,

immunity, and health, and whether it should be read as pathology, adaptation, or some mix of the two.

What I found

Elisabeth Kübler-Ross's On Death and Dying introduced a five-stage vocabulary that made grief speakable, although the implied linearity seems limited (Kübler-Ross, 1969). The Dual Process Model reframed grief as oscillation between loss-oriented and restoration-oriented activities, which appears closer to biological rhythms than to pipeline metaphors (Stroebe & Schut, 1999). Empirical work suggests embodiment is substantial: bereavement has been associated with elevated cortisol, reduced immune function, and increased cardiovascular risk, along with sleep disruption and changes in neural circuits tied to attachment and memory (Stroebe, Stroebe, & Schut, 2007; Buckley et al., 2012; O'Connor, 2019). These findings encouraged me to treat grief as a load-bearing phenomenon for people and organizations, with implications for health services, safety, and performance.

What was left out

A great deal of research assumes universality. It often under-samples colonized, displaced, disabled, or ecologically grieving populations, which may narrow what counts as evidence (Smith, 1999; Tuck, 2009). Cross-cultural physiology and longitudinal community studies could strengthen claims.

Issues of contention

Resilience after loss may be more common than is sometimes assumed, which cautions against pathologizing ordinary grief (Bonanno, 2004). The diagnosis of prolonged grief disorder remains contested, with concerns about medicalizing normative mourning (Wakefield, 2012). There are also debates between detachment models and continuing-bonds perspectives about what healthy adaptation looks like (Klass, Silverman, & Nickman, 1996). I read these tensions as reminders to design for variability rather than for a single trajectory.

3.3 Hygiene

Why I looked here

I sought a metaphor that might make routine supports for grief legible to policy and design audiences. Hygiene offered a bridge because it links private practice with public arrangements.

What I found

European public health history suggests that population outcomes improved when everyday practices and shared systems aligned, for example handwashing, potable water, and sewers (Cipolla, 1992). By comparison, our mental and relational care may still be treated informally. Evidence indicates that modest reflective practices such as journaling, mindfulness, and regular social connection can reduce stress reactivity, support immune function, and correlate with longevity (Pennebaker, 1997; Chida & Steptoe, 2008; Holt-Lunstad et al., 2010). The analogy suggests that small, repeatable practices, paired with clear responsibilities, could help groups carry loss more safely.

What was left out

Hygiene metaphors can carry colonial and moralizing baggage. They risk imposing a single standard or converting care into productivity. Cultural specificity matters, and practices should be chosen and governed locally. Any shared arrangements should be co-designed and optional, with attention to consent and sovereignty.

Issues of contention

If everyday practices help, there is still the question of emphasis. Some argue that resilience is common and that institutionalization may be unnecessary or even counterproductive (Bonanno, 2004). Others warn that clinical codification can medicalize what is often relational and ritual (Wakefield, 2012). I take a middle path. Everyday practices should not replace ritual or relationship. They might complement them, much as handwashing complements clean water.

3.4 Grief as Social and Cultural Practice

Why I looked here

If grief unsettles individuals, I wanted to know how communities might share the load. Bodies grieve, but so do neighborhoods, workplaces, and publics. I looked for how grief is ritualized, narrated, and distributed.

What I found

Kai Erikson's work on Buffalo Creek suggested that communities mourn continuity itself, not only the lives lost (Erikson, 1976). Judith Butler's question about whose lives are recognized as grievable reframed grief as a political act with distributive consequences (Butler, 2004). Ethnographies describe diverse repertoires such as Irish wakes, Ghanaian figurative coffins, and Japanese Obon, which appear to coordinate memory, belonging, and return to life (Walter, 1994; Quarcoopome, 1987; Nelson, 2006). These accounts point to grief as a collective practice that can shape participation, care, and civic trust.

What was left out

Colonial projects often suppressed Indigenous mourning practices, compounding loss with silencing and intergenerational harm (Smith, 1999; Tuck, 2009). Organizational studies sometimes reduce grief to absenteeism metrics, missing its symbolic and civic dimensions. Ecological grief has been documented by activists and communities but remains marginal in many sociological overviews.

Issues of contention

Do rituals resolve grief or keep continuity alive. The literature suggests both possibilities. My reading is pragmatic. Where practices create shared acknowledgment and paced return, participation and trust seem to hold better. Where they are absent or denied, fragmentation appears more likely.

3.5 Grief as Philosophical and Ethical Frame

Why I looked here

Philosophy offered a way to ask what grief may teach about flourishing and justice. I wanted to see how different traditions situated loss within a life worth living.

What I found

Aristotle treated mourning as a disclosure of dependence on goods and relationships central to the good life (*Nicomachean Ethics*, 2009). Stoic writers warned that unexamined grief could distort judgment, while still counseling preparation and care of the self (Long, 2002). Asian traditions often treat grief as instruction. Arjuna's despair becomes a lesson in duty and impermanence in the *Bhagavad Gita* (Radhakrishnan, 1993). Confucian mourning codifies civic obligations that bind families and states (Analects, 1998). Zen readings attend to grief as a teacher of impermanence and humility (Kasulis, 2002). Indigenous cosmologies link loss to regeneration, for example Ainu reciprocity with ancestors and Mayan cycles of rupture and renewal (Ohnuki-Tierney, 1974; Tedlock, 1996). Abrahamic traditions embed mourning in law and liturgy, for example shiva, sabr, and lament as shared obligation (Lamm, 1969; Qur'an 2:155–157; Wolfson, 2014). Taken together, these sources suggest that grief may be read as an ethical practice that binds people to each other, to place, and to the sacred.

What was left out

Western canons have often privileged abstract reason and individual autonomy. Relational and ecological philosophies have been present but underweighted in many institutional settings.

Issues of contention

The long debate frames grief as either irrational excess to be subdued or as a source of wisdom to be cultivated. I lean toward the latter, with caution. Grief need not be romanticized. It may function best as a disciplined commitment to recognition, care, and proportion, guided by traditions that help people return to life.

3.6 Grief in Systemic and Anticipatory Dynamics

Why I looked here

Systems theory offered a civic and ecological lens that asked different questions. I wanted to see where grief might fit in feedback loops, archetypes, adaptive cycles, and anticipatory dynamics.

What I found

Meadows emphasizes feedback, delays, and leverage points, noting that the least visible structures may matter most (Meadows, 2008). Read this way, grief can be a balancing

signal that helps systems oscillate between memory and reorganization. Senge's archetypes illuminate familiar misfits. Wellness workshops in place of bereavement leave resemble Shifting the Burden; time pressure that squeezes acknowledgment looks like Eroding Goals (Senge, 1990). Holling's resilience cycles position disturbance and renewal as ordinary rhythms, which suggests that grief could correspond to the hinge between release and reconfiguration (Holling, 1973; Gunderson & Holling, 2002).

Communities experiencing ecological or industrial decline often report anticipatory grief, which appears to mobilize some actors and immobilize others depending on social support and meaning-making (Cunsolo & Ellis, 2018). These strands encouraged me to treat grief as both feedback and forward-looking appraisal.

What was left out

Systems discourse excels at structure but often brackets affect. Formal models rarely encode grief as a variable, and anticipatory frameworks seldom integrate mourning as a useful signal. More mixed-methods work could connect narrative change to measurable shifts in routines and resource flows.

Issues of contention

Some defend mechanistic metaphors of efficiency and control; others argue for biological metaphors of rhythm and regeneration. My position is modest. Naming loss may extend systems thinking by adding a missing signal rather than replacing existing goals. This chapter lays groundwork for Chapter 4, where I translate these signals into small design moves that can be tested.

3.7 Metaphors, Media, and Cultural Frames

Why I looked here

As the research progressed, it seemed that the deepest drivers of institutional response lived in metaphors. I wanted to know which images steer how we talk about grief, how they travel, and what happens when they settle into policy, design, or models.

What I found

Meadows observes that deep structures often carry outsized power (Meadows, 2008). Metaphors appear to function as such deep structures. The five-stage model reflects a pipeline image of progress from denial to acceptance, which implies linearity and closure

(Kübler-Ross, 1969). Stroebe and Schut's Dual Process Model challenges this with a biological image of oscillation between loss-oriented and restoration-oriented activity, closer to circadian or seasonal rhythms (Stroebe & Schut, 1999). Inayatullah's Causal Layered Analysis reminds us that futures rest on myths as well as metrics; many institutional scripts still lean on battle metaphors that privilege conquest logics over reciprocity and repair (Inayatullah, 1998; Capra & Luisi, 2014; Ostrom, 1990).

Media framing matters. Entman argues that frames select and make salient certain aspects of reality, which shapes what publics and policymakers can see (Entman, 1993). When grief is framed as weakness, it is easily dismissed. When framed as honorable, for example in military sacrifice, it can be mobilized to legitimate policy or ceremony (Anderson, 1983; Butler, 2004).

What was left out

Few studies follow metaphors into their operational afterlives. A pipeline image can become fixed-day bereavement policies. A battle image can become dashboards that treat mourning families as throughput friction (Jones, 2013). In AI, sentiment systems frequently label grief as negative and to be minimized, which flattens relational and cultural meaning into a single valence (Bender et al., 2021). These are not edge cases; they are pathways by which language becomes code and then practice.

Issues of contention

Advocates of battle imagery point to its mobilizing effect. Critics note that adversarial frames can erode trust and reduce resilience over time (Lakoff & Johnson, 1980; Haraway, 2016). Others argue for ecological images such as gardens, kinship, and reciprocity because they better match how life renews (Kimmerer, 2013; Margulis, 1998). My view is pragmatic. Metaphors are governance choices. When we select images that recognize grief as signal rather than defect, we appear to create more room for continuity. Chapter 4 builds on this by translating frames into concrete patterns for roles, routines, and spaces.

3.8 Design, Immersion, and Installation Practice

Why I looked here

If the claim is that grief shapes collective life, I needed design literatures that show how to materialize intangible dynamics so people can learn them together.

What I found

Critical and speculative design treat artifacts as arguments that surface assumptions and open alternative futures (Dunne & Raby, 2013). Experiential futures extends this by staging scenarios that people can enter and test; bodies seem to learn differently when invited into the argument (Candy & Dunagan, 2017). In museums and installations, participation and co-presence can shift spectators into co-authors, which is relevant where civic grief and legitimacy depend on who is seen and heard (Bishop, 2012; Bourriaud, 1998).

Material choices matter. Thomas suggests that care, durability, and craft transmit memory across generations; carried into public services, this becomes attention to thresholds, texture, light, and rhythm rather than spectacle (Thomas, 2007). Trauma-informed and palliative environments echo this finding in practice.

What was left out

Mainstream human-centered and service design literatures still under-address rupture. There are many playbooks for delight and flow, and fewer for closure, pause, or shared acknowledgment. Participatory and immersive practices are often siloed in cultural institutions; translations into public administration, HR, or platform governance remain limited.

Issues of contention

Some argue design should console; others say it should provoke. A grief-informed stance does not require choosing one. Consolation may be appropriate for stabilization; provocation may help with recognition; co-creation may support legitimacy. The through line is proportionate care. In Chapter 4 I convert this into specific design moves that can be piloted and evaluated.

3.9 Worldviews and the Doctrine of Discovery

Why I looked here

To understand why certain losses remain invisible, I examined the worldviews that made erasure seem normal. The Doctrine of Discovery offered a necessary case.

What I found

The 1493 papal bulls underwrote a legal and moral fiction in which lands were treated as empty unless inhabited by Christians. This framework sanctioned conquest and the

severing of human–land relations, and it normalized the denial of Indigenous grief for land, kin, language, and cosmology (Tuck & Yang, 2012; Smith, 1999). These views traveled into cadastral maps, property law, planning, and museum practice. The Vatican's 2023 repudiation arrived late and underscores how durable such paradigms can be once naturalized in governance and culture (Vatican, 2023).

What was left out

Policy and planning often name historical harm but omit grief as an ongoing civic responsibility. Discussions of treaty education, restitution, or land rematriation seldom include design for mourning and continuity. Widely adopted public metrics that register cultural loss and intergenerational mourning as inputs are still rare.

Issues of contention

In decolonial design, some worry that grief language can aestheticize harm without material redress. Others argue that without recognition and ritual, redress is technocratic and brittle (Tuck & Yang, 2012; Smith, 1999). I read the evidence as both-and. Material repair and reform appear necessary, and so do durable practices of acknowledgment. Chapter 4 picks up this thread by specifying proportionate, co-governed practices that can be built into everyday work.

3.10 AI and Post-Biological Futures: Whose Grief Gets Coded, Whose Gets Erased

Why I looked here

As I traced grief across human systems, I realized I also needed to ask what happens to grief when computation mediates more of life. How might artificial intelligence inherit, flatten, or erase grief. What risks emerge when machine logics interpret emotion. Could grief itself become a design material for AI, so that technologies help metabolize loss rather than compound it. I carried into this review a sensitivity to metaphors, since labeling grief as "inefficiency" or "negative sentiment" can predetermine outcomes, and an awareness that bias seeps in not only through training data but also through the economic and philosophical assumptions that shape development.

What I found

Current AI may be less intelligent than its branding implies. Large models compress statistical patterns rather than understand meaning (Mitchell, 2019). Compression is powerful, but it is also reductive. In many sentiment pipelines grief appears only as "negative affect," a quantity to minimize. That treatment risks optimizing away a useful signal.

Bias research reinforced this concern. Large models can amplify the inequities embedded in their data and development pipelines (Bender et al., 2021). Those inequities extend to labor, energy, and resource extraction that sit behind AI's dazzling surface (Crawford, 2021). Search and predictive systems have reproduced structural racism and widened gaps in housing, hiring, health, and policing (Noble, 2018; Benjamin, 2019; O'Neil, 2016). Butler's question about whose lives are recognized as grievable travels here: algorithms already shape whose mourning becomes visible, whose is pathologized, and whose disappears (Butler, 2004).

Global and Indigenous perspectives widened the frame. Some African scholars propose Ubuntu as an orientation for AI, which situates intelligence in community and reciprocity rather than isolated cognition (Mhlambi, 2020). The Indigenous Protocols for AI argue for kinship, consent, and ecological continuity as design principles that resist disembodied notions of insight (Lewis et al., 2020). Latin American cybernetics and governance research emphasize participatory feedback as a precondition for viability (Espejo, 1996).

Cosmotechnics reminds us that every culture links technology to its own ethics and cosmology, and that imposing a single "universal" AI may erase plurality (Hui, 2016). Japanese traditions that treat robots as ensouled suggest that care and mourning could be possible in post-biological relations, which challenges narrow readings of emotion recognition.

Affective computing shows both promise and limits. Work on machine sensitivity to human emotion opened a field of inquiry (Picard, 1997; McStay, 2018). Yet grief rarely reduces to face geometry or valence scores. If treated as a negative to suppress, systems may do what Haraway warns against: refuse to "stay with the trouble," and route around pain rather than help communities process it (Haraway, 2016).

I also noticed grief arising around AI itself. People mourn jobs, craft, and autonomy lost to automation; the erosion of human distinctiveness; unequal distributions of benefit; environmental costs of computation; and the spread of surveillance. Public backlash sometimes reads as mourning before it reads as critique. If that grief remains unacknowledged, polarization may harden.

What was left out

Much AI ethics work still frames bias as a technical fix, focusing on datasets, explainability, or compliance. Far less attention is paid to grief as a knowledge source. Western scholarship often privileges individual emotion detection and overlooks cultural, ecological, or ancestral mourning. Even promising affective approaches seldom engage ritual, temporality, or the persistence of loss. Recognizing grief as information might produce different targets: memory, consent, and continuity rather than only accuracy and speed.

Issues of contention

Debates remain polarized. Some believe technical debiasing will be sufficient; others argue the problems are structural. Some see emotion recognition as feasible; others call it pseudoscience. My stance is cautious. Grief may be the missing category. Without it, AI risks compounding erasure by optimizing away mourning, encoding inequalities of recognition, and scaling anthropodenial. With it, design could embed memory, reciprocity, and relational accountability as structural elements. That would mean systems that surface loss proportionately, record consent and lineage, and slow interaction where human cadence matters.

3.11 Frameworks and Process Models in Systems, Design, Foresight, Policy, and Markets

Why I looked here

If I hoped to propose a framework, I wanted to learn from models that already travel well. Systems thinking, foresight, design, policy, and economics are the channels through which societies organize continuity and adapt to rupture. Reading across them promised a clearer view than reading within any one silo.

How I chose disciplines

Systems thinking names feedback and resilience.
Foresight brings time horizons and myth to the surface.
Design turns ideas into practices and artifacts.
Policy decides which losses count as public concerns.
Economics sets incentives and tallies costs and spillovers.
Each discipline sees a piece. Together they form an ecosystem of sensemaking.

What I found

Frameworks often work as boundary objects, flexible enough to travel, structured enough to coordinate action (Star & Griesemer, 1989). In systems thinking, Meadows and Senge show how feedback, accumulation, and delay shape outcomes, and how hidden dynamics can matter more than what is easy to measure (Meadows, 2008; Senge, 1990). Grief fits here as a balancing signal that destabilizes and then helps recalibrate after rupture.

Foresight adds depth. Causal Layered Analysis, futures archetypes, the futures cone, and Three Horizons show how narratives and metaphors direct attention to different futures and away from others (Inayatullah, 1998; Dator, 2009; Voros, 2003; Sharpe et al., 2016). Grief belongs at the level of myth and worldview as both memory and warning.

Design frameworks convert insight into form. Human-centered and service design operationalize empathy, mapping, and iteration, while speculative and experiential design stage futures people can feel and test (IDEO, 2015; Stickdorn & Schneider, 2012; Dunne & Raby, 2013; Candy & Dunagan, 2017). In this space, grief is not a bug to eliminate. It is a condition to prototype with proportion, whether through objects, spaces, or rituals.

Systemic design ties these strands together as civic sensemaking. Scholars describe how tacit knowledge, institutional memory, and legitimacy show up in collective problem solving (Jones, 2014, 2018; Ing, 2016; Metcalf, 2010; Nousala, 2016). That reading

resonated with my observation that grief frequently operates as tacit knowledge that shapes trust and adaptation.

Policy models add timing and coalition dynamics. Multiple Streams, punctuated equilibrium, and advocacy coalitions show how windows open, venues shift, and belief systems matter (Kingdon, 2011; Baumgartner & Jones, 1993; Sabatier & Jenkins-Smith, 1993). Policy feedback reminds us that programs generate their own constituencies and path dependencies (Pierson, 1993). Whether grief becomes legible may depend less on intensity than on institutional readiness and venue.

Economics and strategy surface hidden costs. The capability approach reframes welfare beyond income, while work on transaction costs, incomplete contracts, and information asymmetry explains why trust and norms matter to continuity (Sen, 1999; Coase, 1960; Williamson, 1985; Akerlof, 1970). Loss corrodes capabilities and trust, which can destabilize value creation.

Behavioral work connects to daily life. Prospect theory, nudges, MINDSPACE, and COM-B show how loss and affect shape choices through frames and defaults (Kahneman & Tversky, 1979; Thaler & Sunstein, 2008; Dolan et al., 2010; Michie et al., 2011). Even when organizations ignore grief, decisions may still shift in predictable ways.

Soft power and media studies remind me that legitimacy depends on recognition and narrative. Attraction and credibility can be strategic assets, and frames can decide which losses publics see as actionable (Nye, 2004; Entman, 1993). Commemoration, mourning, and silence all have policy consequences.

Across these literatures I found a common thread. Grief is already present in these systems, though seldom named. When treated as noise, it corrodes. When treated as signal, it may support adaptation.

What was left out

Even robust models often bracket grief. Systems work privileges efficiency, not ritual. Foresight anticipates risk, not mourning. Design toolkits optimize flow and delight, not closure. Policy models count costs and votes, not sorrow. Economic ledgers record productivity and rarely caregiving. Behavioral toolkits treat affect as bias to nudge away, not wisdom to metabolize. Soft power measures attraction and often skips grief as a dimension of legitimacy. The omissions are systematic rather than malicious.

Issues of contention

There are live debates about universality versus context, technocracy versus participation, and paternalism in behavioral tools. In strategy, instrumental views of social life face strong critique. Underneath these arguments sits a simple choice. Do we treat grief as interference, or as information. Current practice tends to the former. My position is cautious. Treat grief as a factor to design for, then test whether proportionate recognition and cadence improve continuity.

3.12 Synthesis: Threads, Tensions, and Why this matters for PACER

Reading across biology and psychology, social and cultural practice, philosophy and ethics, systems and foresight, media and metaphor, design, decolonial worldviews, and AI, I began to see grief not as a single object of study but as a recurrent condition that different disciplines keep touching from different angles. Several observations seem to hold across these bodies of work.

First, there is a cross-disciplinary pattern of **presence without naming**. Physiology and clinical psychology register measurable effects; sociology and anthropology describe robust communal repertoires; philosophy and Indigenous traditions supply ethical accounts; systems and foresight point to feedback, time, and adaptation; design and installation practice show how feeling can be staged for collective learning; AI and governance raise questions of recognition and erasure. Yet many fields appear to bracket grief as background, inefficiency, or private matter. That bracketing may help explain why institutions struggle with continuity after rupture.

Second, **metaphors travel**, and when they travel they often govern. Pipeline images tend to produce fixed-day policies and linear expectations. Battle frames seem to recruit urgency but can normalize adversarial logics. Biological and ecological images appear to make oscillation, cadence, and repair more thinkable. Media and platform dynamics then amplify favored frames. In combination, these forces shape whether grief is seen as defect to suppress or signal to heed, and they may help explain why design often optimizes for flow while skipping pause, handover, or return.

Third, **time and scale matter**. The psychological literature on oscillation aligns with systems descriptions of balancing loops and resilience cycles. Rituals that pace attention and return may be the social analogs of recovery at the individual level. Anticipatory perspectives show that communities can grieve futures foreclosed as well as pasts lost. This temporal stacking may be one reason standardized schedules often misfit real recoveries.

Fourth, **outliers and cautions are instructive**. Evidence that many people adapt without prolonged impairment challenges any impulse to medicalize ordinary mourning. Debates about prolonged grief diagnosis and resilience remind me to design for variability rather than for a single trajectory. In decolonial work, warnings about aestheticizing harm without material redress temper enthusiasm for symbolic gestures. In AI, optimism about technical fixes meets structural critiques; both perspectives sharpen what a careful practice might require.

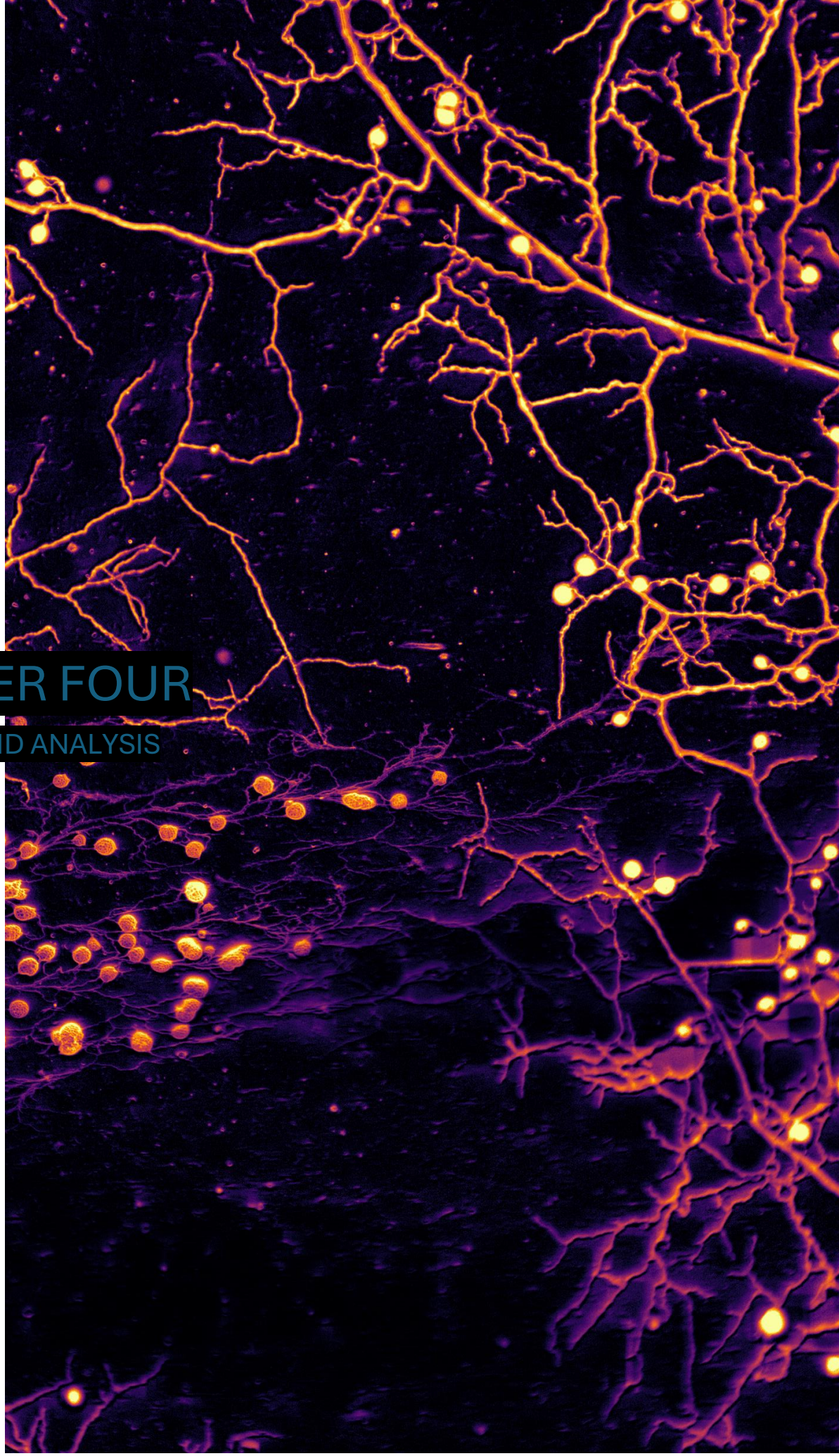
Fifth, **disciplines inform one another** when read side by side. Biological oscillation suggests why systems thinking should attend to cadence and delay. Systems archetypes help designers spot where well-meant fixes shift burdens rather than address causes. Ritual ethnographies offer concrete repertoires that policy and organizational practice could translate into proportionate protocols. Media framing research explains why certain griefs remain invisible to decision makers. Indigenous and global philosophies surface relational duties that can anchor consent, data governance, and participatory oversight in AI and civic technology. Together these lines of sight suggest that recognition, rhythm, and repair are not soft extras; they may be structural conditions for continuity.

Why, then, do we so often fail to design for grief. Several mechanisms recur. Stigma and individualization make mourning look like a private deviation rather than a predictable collective load. Incentive structures reward short-term throughput more than long-term continuity. Institutional clocks are set to steady acceleration rather than patterned oscillation. Data models collapse complex affects into simple valence scores. Battle metaphors perform urgency while crowding out reciprocity. These are not moral failings so much as defaults that a different lens might unsettle.

This synthesis matters for the Grief-Informed Futures + Design model because these disciplines are the channels through which societies learn, adapt, and sustain legitimacy. Each show where grief already operates but is misrecognized: as feedback in systems, as signal in foresight, as human factor in design, as venue and timing in policy, as hidden cost in economics, and as narrative power in culture. By weaving them together, the model borrows clarity and usability from established frameworks and extends them by treating grief as a first-class design requirement. In practice, that implies proportionate recognition, ritual repertoires, cadence by design, and safeguards against erasure in machine-mediated contexts.

Chapter 4 now takes up these threads empirically. I examine how grief appears in real settings, how metaphors and clocks shape response, and where small, durable adjustments to roles, routines, spaces, schedules, and data rules may support continuity

without grand programs. The aim is modest and testable: to see whether treating grief as a systemic variable improves safety, trust, and learning in the places we work and live.

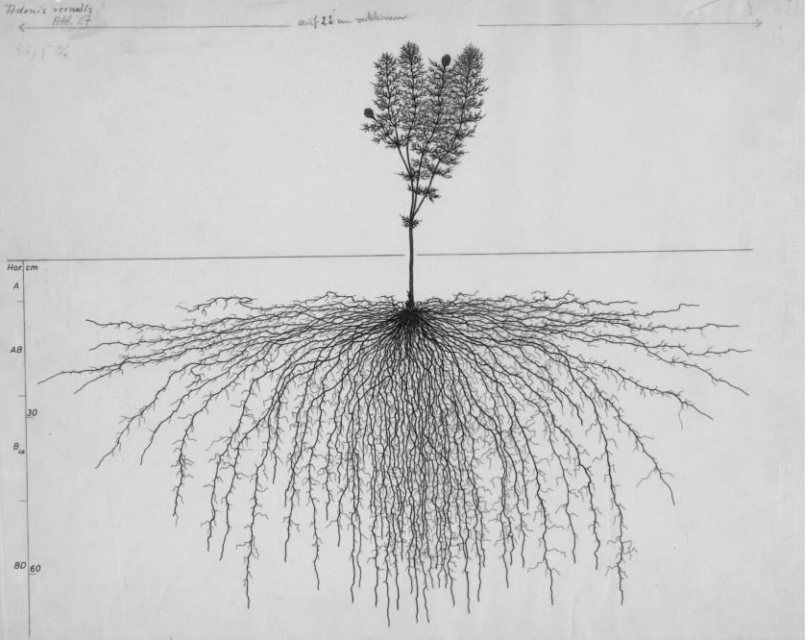


CHAPTER FOUR

FINDINGS AND ANALYSIS

In this Section...

- In this chapter we move from theory to practice, showing how grief surfaced as a hidden driver in healthcare, governance, workplaces, ecology, and technology.
- Four systemic patterns are highlighted:
    - **Pattern 1: Universality + stigma**
      Grief is everywhere but rarely named. When it's unnamed, people disengage or leave.
    - **Pattern 2: Temporal stacking**
      Past, present, and anticipatory loss stack; bad timing breaks good plans.
    - **Pattern 3: Words decide what counts**
      Policy and product language signals whether grief is welcome or erased.
    - **Pattern 4: Ritual + immersion enable continuity**
      Shared rituals and sensory spaces help teams carry memory into action.
- The installation *Space for Grief* is introduced as a live experiment, translating systemic insights into multigenerational felt experience.
- These findings build the bridge to the framework: structured ways of metabolizing rupture into continuity.



“If we struggle to design for bodies and minds as they actually are, it follows that we rarely design for grief as it actually arrives.”

4.0 Introduction: Human factors as load-bearing

I begin with an operational claim that I have had to relearn in every project: when human factors are treated as optional, systems tend to lean toward failure. The evidence reads as performance, not sentiment. Teams that cultivate psychological safety often outperform because coordinated risk taking appears to depend on trust as much as talent (Edmondson, 2018). Workplaces that adopt biophilic principles report lower absenteeism and error, which suggests that light, air, and greenery help regulate physiology in ways fluorescent bulbs do not (World Green Building Council, 2014). Organizations that treat inclusion as capability tend to out-innovate, consistent with the benefits of cognitive diversity (McKinsey, 2020).

Yet many environments still seem calibrated to an imaginary average. As *Invisible Women* shows, defaults often align with male, able-bodied, neurotypical, and well-resourced users, with predictable harms for everyone else: crash safety tuned to some bodies and not others, transit designed for commuters while ignoring unpaid care, and drug dosages calibrated on male physiology that later prove harmful to women (Criado-Perez, 2019). Extend the lens and the gaps seem to widen. Wheelchairs at subway stairs. Autistic students in classrooms built for a single sensory profile. Elders navigating touch-screen only services.

If we struggle to design for bodies and minds as they actually are, it follows that we rarely design for grief as it actually arrives.

Chapter 3 suggested that metaphors and clocks shape whether loss is treated as noise or information. This chapter turns to what I observed in practice. I trace how grief may circulate between psyche and society, phrase and policy, inner weather and outer climate,

and where small, proportionate adjustments appeared to stabilize the whole. Where the signal is weak, I say so. Where it is strong, I try to test it against rival explanations.

Biology offers a reminder. Nothing in nature runs at one hundred percent efficiency all the time. Rest, decay, and renewal look like features rather than defects (Margulis & Sagan, 1995). Institutions, however, often behave as if perpetual productivity were both possible and mandatory. The early pandemic made that contradiction visible. As homes turned into offices and output targets tightened, many reported burnout, isolation, and blurred boundaries between surviving and performing (Schieman, Badawy, Milkie, & Bierman, 2021). Grief sits inside this tension. It is the structural reminder that we are not machines. Rupture, pause, and absence are part of how systems keep continuity.

"Anger, fear, disgust, pride, empathy, and elevation all appear to shape decisions, rules, and everyday habits."

4.1 Why I center grief rather than treat all emotions alike

I begin with comparison, because other emotions clearly matter. While alluded to in the introduction, I will go into greater detail here. Anger, fear, disgust, pride, empathy, and elevation all appear to shape decisions, rules, and everyday habits. Anger often follows appraisals of certainty and control and can increase blame and risk taking. Fear often follows uncertainty and can increase vigilance and risk aversion (Lerner & Keltner, 2001; Lerner et al., 2015). Disgust has been linked to stricter moral judgments and to public health choices such as graphic warnings and sanitation regimes (Wheatley & Haidt, 2005). Pride and national sentiment have supported monumental architecture and mega events. Empathy and solidarity have helped normalize accessibility, from curb cuts and captioning to accessible by default interfaces. These same emotions also seem to work quietly. Pride and group identity may increase jersey sales and event attendance. Disgust cues on

packaging may reduce tobacco appeal. Solidarity cues may increase the wearing of cause ribbons. Sadness and stress can shift eating toward immediate comfort or distraction, with mixed effects across individuals (Macht, 2008; Evers, Stok, & de Ridder, 2010). In short, many emotions can prefigure what feels necessary, acceptable, or urgent in policy and in daily life.

Given that landscape, why do I center grief. My answer is modest and testable. Grief seems to bundle design-relevant demands that other affects usually distribute across separate moments. It is not larger than other emotions. It is differently configured.

First, temporality. Grief layers past loss with anticipated losses and often alters time sense. Meaning reconstruction research suggests that bereaved people engage in extended sense making and narrative revision that does not track a simple recovery curve (Neimeyer, 2001). Anticipatory grief adds future-loss appraisals to present strain (Rando, 1986). Time perspective work links such shifts to different choices under risk and delay, which may help explain why fixed milestones and standard return-to-work timetables underperform for people who are grieving (Zimbardo & Boyd, 1999, 2008).

Second, relational identity. Grief remakes who I am with and to others, not only how I feel. Attachment theory predicts regulatory disruption when attachment bonds are severed, since the other person helped regulate meaning and stress in ordinary time (Bowlby, 1969/1982). Social Baseline Theory adds that humans budget effort on the assumption of reliable social support, so the loss of that baseline raises metabolic and attentional costs for the same task load (Beckes & Coan, 2011). Role transition research shows that bereavement often triggers renegotiations at home and at work, changing obligation networks and performance even when attendance resumes (Ashforth, 2001). Grief may change someone's entire set of preferences for food and restaurants, for example avoiding dishes or places associated with a prior relationship or lost career.

Third, pace. Recovery appears to rely on oscillation between engagement and restoration. The allostatic load and effort–recovery literatures suggest that sustained demand without recovery degrades cognition and health and increases error risk (McEwen & Seeman, 1999; McEwen, 2007; Meijman & Mulder, 1998; Sonnentag & Fritz, 2007). Many institutions are tuned for steady acceleration. Grief often requires patterned oscillation. That mismatch produces predictable brittleness.

A resource-loss lens clarifies why this bundle matters. Conservation of Resources theory proposes that stress intensifies when people lose multiple valued resources at once and lack time or means to replenish them (Hobfoll, 1989, 2001). Grief is prototypically

multiplex. It can involve the relationship itself, identity and role, routines and confidence, the calendar and horizon, and sometimes income and place. Other discrete emotions often involve narrower appraisals and resource changes. This is one reason a distinct design response seems warranted.

What follows for design and governance. I keep system language narrow. In STS and information studies, infrastructure refers to the often invisible relational substrate that enables action and is learned as part of membership and revealed by breakdown (Star & Ruhleder, 1996; Bowker & Star, 1999; Larkin, 2013). Here I use a modest operational sense. I mean the durable supports and cadences that help collective work continue, for example leave and staged return, handover rituals, memorial protocols, service hours, and data rules that reduce grief erasure. I am not claiming grief is infrastructure in the full scholarly sense. I am arguing that grief-literate supports and cadences may function infrastructurally because they quietly bear load.

Architecture in buildings and computing denotes the arrangement of parts into a coherent whole and the high-level organization of a system (Alexander, 1977; Garlan & Shaw, 1993). As mentioned in the introduction, I use architecture to mean the patterned arrangement of roles, rules, rooms, rhythms, and interfaces, similar to choice architecture. A grief-aware architecture allows oscillation between engagement and restoration rather than assuming constant flow. Where supports and cadences carry load, architecture scripts everyday behavior. When more precise terms help, I use institutional arrangements, operational scaffolds, ritual repertoires, cadence design, and sociotechnical routines.

The mechanism I rely on is observational rather than doctrinal. Felt absence can become a shared story. A story can become a standard. A standard can become policy. Policy can become artifact. Not every change follows this ladder and grief is not the only driver. Yet across domains the pattern appears often enough to justify careful study and small experiments.

The practical claim is intentionally cautious. If grief is treated only as private sadness, institutions may continue to struggle to metabolize disruption in biologically and socially realistic ways. If instead we design for grief's temporality, relational identity, and pace, then small and durable adjustments to supports and architecture, especially recognition protocols and cadence design, may reduce operational error and attrition while improving trust and continuity, even when budgets are tight.

4.2 Where grief shows up: Understanding the Systemic Impact

Grief appears across scales, often where people least expect it. After tracing the patterns in Chapter 3, I now ask a simpler question: where is continuity under strain?

At the level of the self, grief can arrive as bereavement, illness, or ruptured identity, unsettling how time, role, and meaning feel in the body. Families and communities experience it in divorce, displacement, and broken trust, where collective shocks alter belonging (Erikson, 1976; Butler, 2004). Organizations grieve too, though we rarely name it that way. Layoffs, failed projects, or ethical breaches corrode professional identity. Much of this manifests as disenfranchised grief; losses unacknowledged by policy or culture, leaving workers unsupported (Doka, 1989; Harris, 2021). Nations carry grief from wars, colonization, and historical injustice, including the legacy of residential schools in Canada (TRC, 2015; Coulthard, 2014). And at global scales, grief takes the form of pandemics, climate disruption, and technological displacement, each closing futures as much as they close factories.

If grief is so pervasive, where does it come from? The list is both familiar and startling when seen together: deaths, illness, relationship breakdowns, job loss, displacement, and insecurity. Yet there are also quieter forms: existential grief over aging or shifting beliefs, grief for ecosystems or cultural practices in decline. These sources span trauma, transition, and the slow erosion of worlds. The following image (Figure 4.1) describes some of the types of grief which may impact an individual, as discovered across industries, sectors and geographies:

- Death of a loved one
- Loss of a relationship
- Job loss or career change
- Personal illness or injury
- Cultural or environmental displacement
- Loss of security
- Existential grief
- Other traumatic events (wars, accidents or violent events)

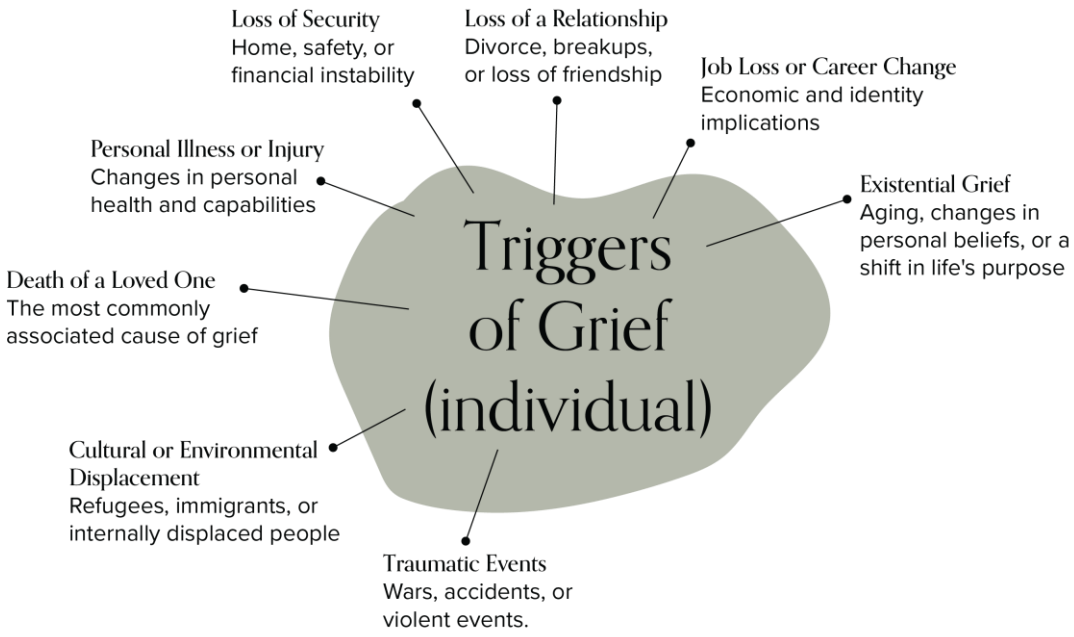


Figure 4.1 ***Triggers of grief.*** *Bereavement, illness, relationship or job loss, displacement, trauma, insecurity, and existential change can each initiate grief responses; naming the source helps match support to need.*

Grief may impact communities at scale. The following image (Figure 4.2) describes triggers of grief at a societal scale.

These types of triggers include, but are not limited to:

- Public tragedies
- Cultural shifts
- Natural disasters
- Technological changes
- Systemic racism
- Systemic oppression
- Economic downturns
- Environmental loss
- Public Health crises
- Wars and Conflict
- Housing Crises

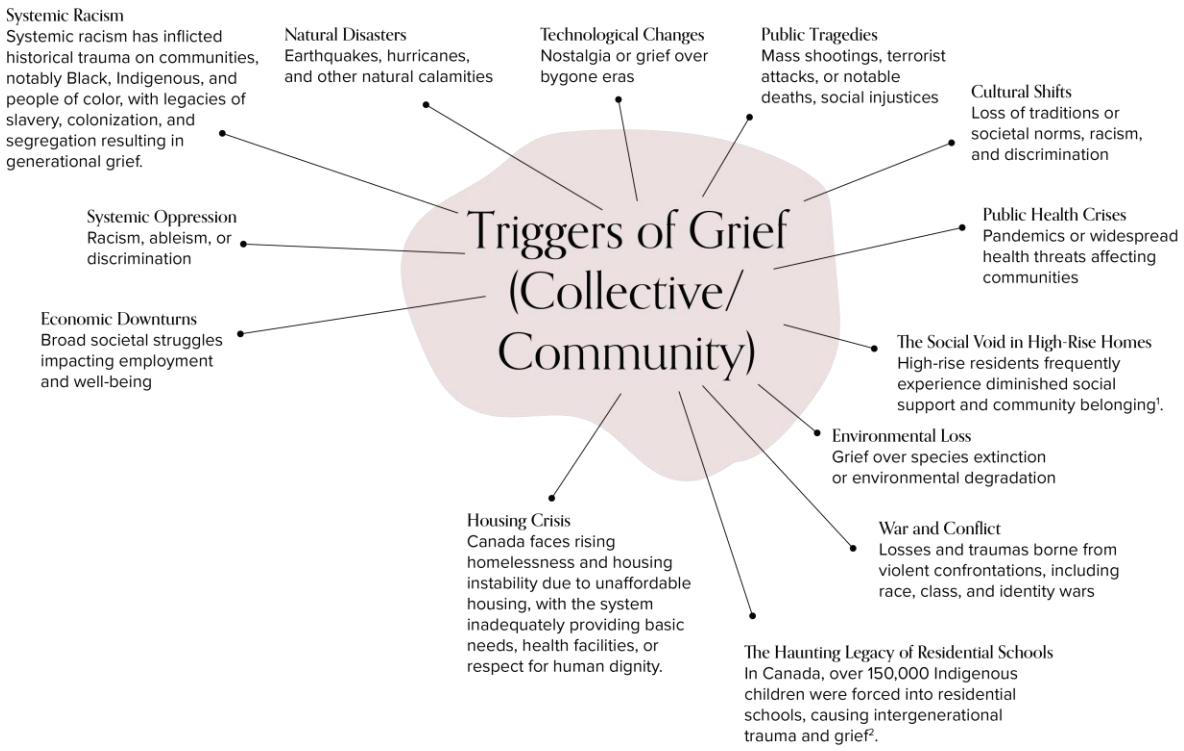
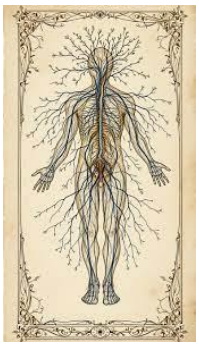


Figure 4.2 ***Collective triggers of grief.*** *Community-level loss can stem from structural injustice, economic shocks, disasters, pandemics, violence, environmental damage, cultural erosion, and failures in housing and the built environment. Mapping these drivers helps target prevention, repair, and community support.*

Body and brain



For me, grief begins in the body. It is chemistry before it is philosophy. The HPA axis surges, cortisol rises, immunity dips, and sleep fractures. Neuroscience confirms what many describe intuitively: the same circuits that process physical pain activate during mourning (Eisenberger & Lieberman, 2004). Cognition follows. Attention scatters, working memory thins, and judgment slows (O'Connor, 2019).

These changes do not remain private. They travel into classrooms, wards, courts, and boardrooms. I recall a nurse returning to nights two weeks after a parent's funeral. Official leave was three days. The unit was short staffed, alarms constant. Protocols were second nature, yet attention pulled sideways. Charting slowed. A near miss appeared later in the dashboard. What the dashboard could not capture was that an ungrieved loss had entered the workflow. The team compensated in the moment, but the hidden cost was burnout that would echo for months. What began as private sorrow became organizational risk.

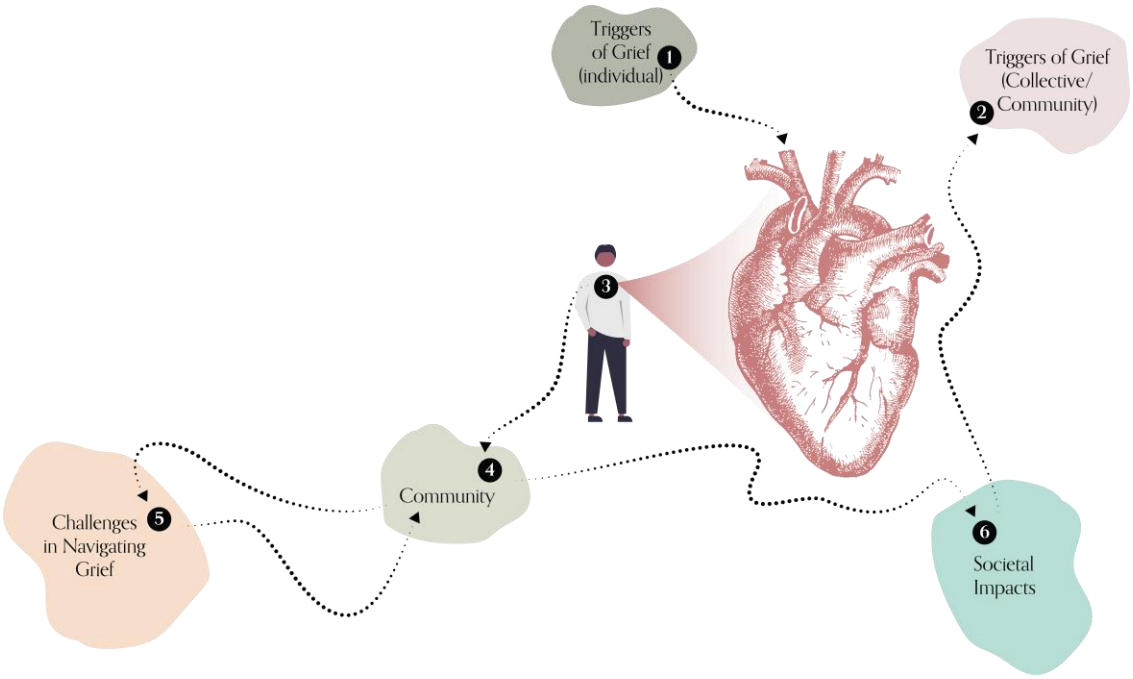


Figure 4.3 ***Grief's ripple path.*** *Individual and collective triggers feed into personal experience, spread through community, create navigation challenges, and accumulate as societal impacts—signaling that grief travels across levels and returns as feedback unless it is acknowledged and supported (Lee, Hossain)*

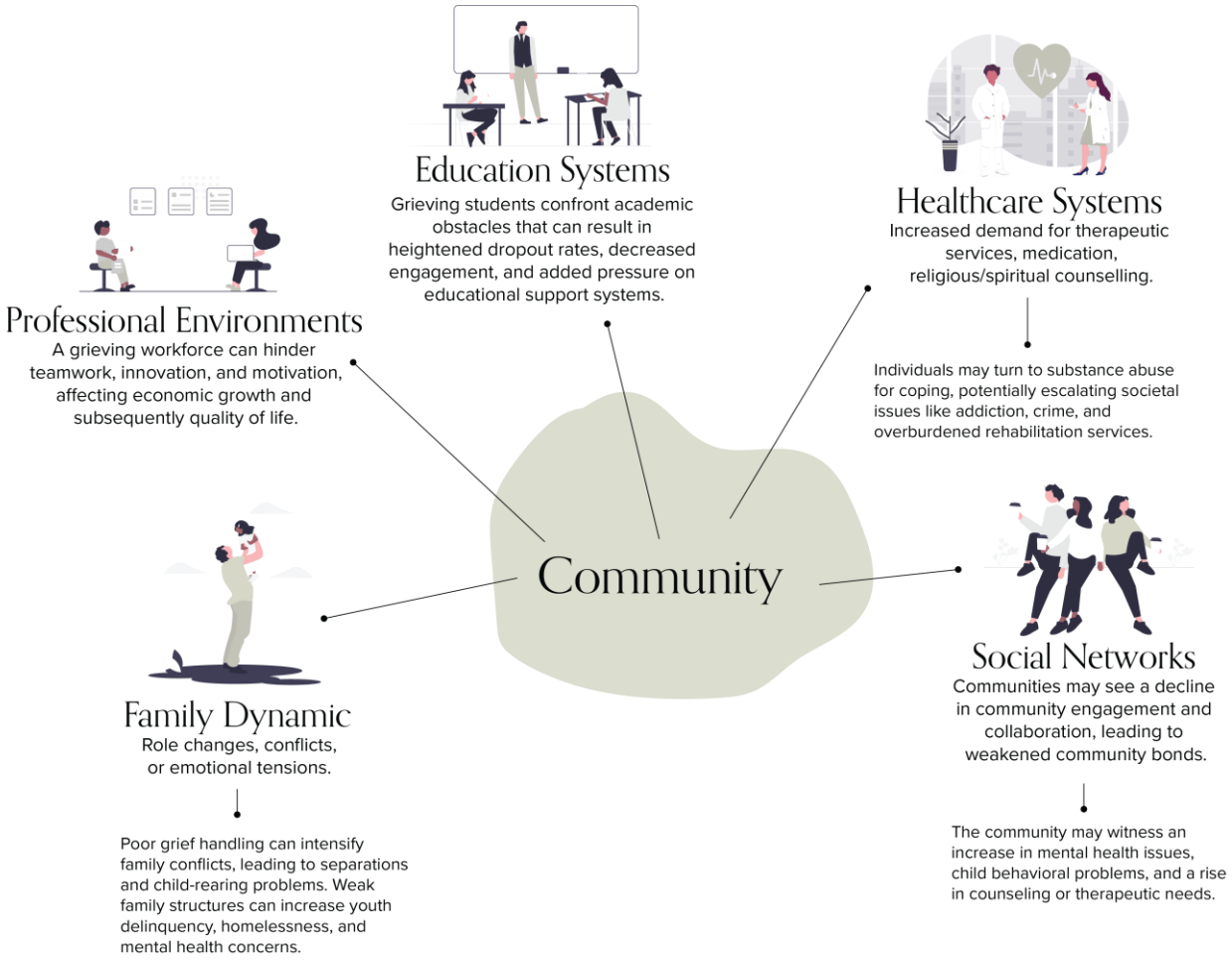


Figure 4.4 ***Community ripple effects of grief.*** *When grief is unsupported, it can strain workplaces, schools, healthcare, social ties, and families. Coordinated care and connection help communities stabilize and recover.*

How an Individual's Grief Can Filter Through Networks

When I think about emotions I rarely see them contained within one person. Even when it begins as something deeply private, it often extends outward into families, classrooms, workplaces, and communities in ways both intended and unintended. In practice, grief behaves less like an isolated wound and more like a signal traveling along ties. Left unaddressed, it can destabilize those ties in ways that accumulate long before they appear in national statistics or policy debates.

Education systems
Students who are grieving often struggle to concentrate, keep pace with assignments, or feel motivated to participate. Research shows higher dropout rates, lower grades, and disengagement when grief is ignored (Dyregrov, 2008). The effect is not just individual. Teachers and peers adjust workloads, counsellors stretch capacity, and entire classrooms can be reshaped by one student's absence or distress.

Healthcare systems
When grief is suppressed, it often reappears in clinics. People turn to medication, therapy, or spiritual counselling to manage what is at root an emotional and social reality. Others cope through substance use, which can escalate into addiction, crime, or emergency care needs, adding strain to already stretched services (Worden, 2009). I have spoken with practitioners who recognize this cycle clearly: grief denied upstream resurfaces downstream as preventable demand.

Social networks
Communities are not immune. Grief left unspoken can weaken trust and engagement. I have witnessed neighborhoods where collective mourning was denied after violence, displacement, or tragedy become more fragmented, with fewer volunteers, more suspicion, and declining collaboration. Sociologists note the link between unprocessed collective loss and declining social capital (Putnam, 2000). Over time, mental health needs rise, especially among children and adolescents who often mirror the unresolved grief of adults around them.

Family dynamics
Families carry grief in intimate ways. When it is not named, roles shift silently: one child becomes a surrogate adult, one parent withdraws, conflicts deepen. Research shows unresolved grief can intensify marital strain, increase the likelihood of separation, and affect parenting practices (Parkes, 1998). The outcomes are not abstract: youth delinquency, homelessness, and intergenerational trauma often trace back to unresolved loss in the household (Walsh & McGoldrick, 2013).

In short, the private can quickly become public. A student's grief shapes the tempo of a classroom. A worker's grief alters a team's capacity. A family's grief recalibrates a community's bonds. Left unattended, these ripples accumulate until they strain larger systems. Which is why, for me, grief is not only personal; it is civic.

Organizations

I think of organizations as living systems that run on meaning as much as money. They inevitably breathe in the grief people carry, and they produce their own. Layoffs and failed projects are obvious sources. So is quiet identity loss when a profession's standards are undermined. Much of this is disenfranchised grief, unacknowledged and unsupported (Doka, 1989; 2002). The effects are visible as absenteeism, presenteeism, disengagement, and turnover, with real costs alongside the cultural ones (Hazlett-Stevens & Oren, 2017; Harris, 2021).

I have entered workplaces where the air felt heavy without a single headline event. The loop was familiar. Burnout drove exits. Exits produced instability. Instability bred more burnout. . Small, sincere practices of acknowledgment and closure, while paced return can act as balancing loops. They stabilize morale and reopen space for attention and creativity.

Nations, and cities

At civic scales, grief can become a question of belonging and legitimacy. Nora's lieux de mémoire remind me that monuments, cemeteries, and rituals function as interfaces that convert loss into continuity (Nora, 1989). Ariès shows how modernity privatized mourning and made it harder to see in public life (Ariès, 1981). Where feedback is suppressed, systems falter.

When I look at civic life through systems theory, grief seems less like a private feeling and more like a kind of feedback. Donella Meadows reminds us that systems stumble when they suppress feedback and adapt better when they absorb it (Meadows, 2008). Grief is one of those signals. It surfaces when lives, roles, or futures are disrupted, and it insists that the system pay attention.

Patterns from systems archetypes make this visible. "Shifting the burden" appears when institutions treat grief as a side issue and respond with surface fixes. Canada's Truth and Reconciliation Commission offered powerful testimony, but when governments substitute symbolic apologies for structural reform, grief persists as unresolved tension (TRC, 2015; Coulthard, 2014). Another archetype, "fixes that fail," emerges when short-term efficiencies deepen long-term harm. A clear example is bereavement leave: when workers are asked to return after three days, it may save costs in the short run but drives burnout, turnover, and errors later. At civic scales, I have seen the same logic play out in housing policy. When cities treat homelessness as a temporary disruption rather than grief over displacement and loss of community, quick fixes like temporary shelters collapse under demand, leaving deeper instability in their wake.

Systemic Costs of Suppression: From Local to Global

Grief that goes unnamed rarely disappears. It tends to move. What begins as private sorrow often reappears in places that seem distant: in mortality tables, in declining voter turnout, in classrooms stretched thin, in court dockets, in national health budgets. Suppression does not save energy; it shifts the weight. Systems theory suggests this is predictable. When feedback is muted, instability does not vanish, it travels until it re-emerges in more disruptive and expensive ways (Meadows, 2008).

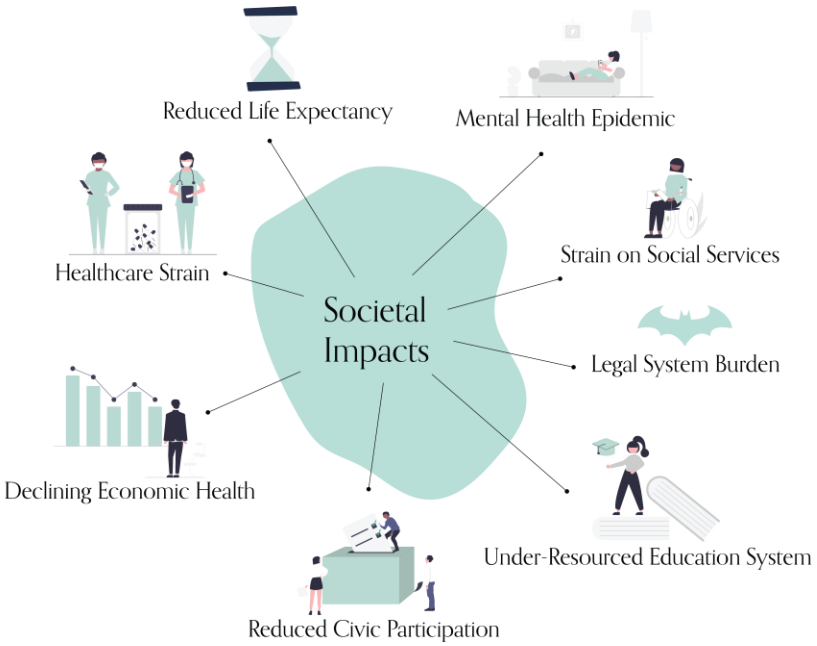


Figure 4.5: ***Societal Impacts spread across systems.*** *When large-scale distress goes unmet, pressures show up in healthcare, the economy, civic life, social services, justice, and education, contributing to shorter lifespans and a rising mental-health burden. The effects are interconnected rather than isolated.*

The evidence is difficult to ignore. Epidemiological studies confirm the widowhood effect: bereaved spouses face sharply elevated mortality risk in the months after a partner's death (Elwert & Christakis, 2008). Stress cascades into cardiovascular strain, immune suppression, and metabolic change. At population scale, grief shows up not just in stories of heartbreak but in reduced life expectancy.

Civic life reveals another cost. When people feel their grief has no place, public participation often thins. Putnam (2000) and others have shown that unacknowledged losses diminish trust, voting, volunteering, and collective investment. Over time, institutions that might have supported recovery weaken instead.

Social services absorb the spillover. Worden (2009) describes how unresolved grief often hides beneath presenting issues such as substance use or behavioral crises. When families and communities cannot metabolize loss, child protection agencies, housing programs, and addiction supports carry burdens they were not designed for. Courts do as well. Families who feel dismissed often seek justice through litigation. Transitional justice research warns that collective grief denied can fuel cycles of contestation and conflict rather than resolution (Hayner, 2011).

Education systems are no less affected. Dyregrov (2008) found that grieving students disengage more often, with higher dropout rates and lower achievement. Schools without grief supports see teachers stretched, counsellors overwhelmed, and achievement gaps deepen, reinforcing inequality.

Public health adds another layer. Prolonged grief disorder is now recognized in ICD-11, confirming what clinicians have long observed: unresolved grief overlaps with depression, sleep disorders, and substance use (Prigerson et al., 2009; WHO, 2019). At scale, these conditions resemble epidemic patterns, filling clinics with cases that are treated as mental illness but often have roots in unattended loss.

The workplace translates grief into economic terms at a macro level. In the UK, bereavement-related losses are estimated to cost billions annually in productivity (McGuinness, 2018). Organizations frequently misattribute these losses to “low engagement” or talent churn, when in fact they are grief’s economic footprint (Kristensen et al., 2012). Healthcare systems carry another portion of the cost. Stroebe, Schut, and Stroebe (2007) describe how grief presents as somatic complaint, exacerbates chronic illness, and increases emergency visits, producing demand that standard protocols rarely anticipate.

When I widen the lens to the global scale, the pattern is amplified. Grief moves across borders, linking events that may appear unrelated. A drought in one region can intensify migration pressures in another. A public health crisis in one city can constrict economies on the other side of the world. Grief at this scale behaves less like a local storm and more like climate itself: diffuse, patterned, and deeply consequential.

Systems theory helps here too. Global grief functions as feedback in the planetary system. When it is denied in one place, it often re-emerges elsewhere as unrest, mistrust of institutions, or volatility in trade and diplomacy (Meadows, 2008). Strategic foresight reminds me that these dynamics rarely move in straight lines. Delays and interdependencies mean today's unattended losses may accumulate into tomorrow's disruptions (Poli, 2010). In my own work with civic centres, I have noticed how technical contingencies are planned for, but the emotional residues that decide whether societies cooperate or withdraw are often ignored.

History illustrates the scale. The Syrian civil war produced displacement and violence within its borders but also cascaded grief across Europe, reshaping elections and policy debates. Famines in Bengal and Ireland were not only local catastrophes but the beginnings of diasporas whose political influence endures generations later. The global financial crisis of 2008 was not only about subprime mortgages. It was also about the grief of lost homes, jobs, and futures, which eroded trust in financial and political systems worldwide.

Grief does not only destabilize. It can mobilize cooperation. After the 2004 Indian Ocean tsunami, humanitarian aid surged across nations, producing new models of rapid response and coordination. Climate grief has inspired youth-led movements like Fridays for Future, where school strikes in Dhaka, Berlin, Nairobi, and Toronto became rituals of intergenerational demand. These actions suggest that shared grief can open pathways for solidarity that might otherwise remain closed.

Economic theory sharpens the point. Prospect theory shows that losses weigh more heavily than equivalent gains (Kahneman & Tversky, 1979). At global scales, this means nations often respond more urgently to perceived decline,whether in sovereignty, industry, or identity, than to opportunities. Trade wars, Brexit, and energy transitions all carry elements of grief for what is perceived as disappearing. Sometimes this produces misdirected responses, other times it creates openings for innovation. International political economy reminds us that markets are built on trust. When grief erodes trust, the consequences extend far beyond the site of the original loss.

Seen through this lens, the systemic costs I traced earlier are mirrored globally. Unacknowledged grief shortens life expectancy, thins participation in international cooperation, strains social services and courts through displaced populations and refugees, burdens classrooms with dropout and disruption, fills clinics with grief-related mental health crises, and undermines economies by eroding productivity and trust.

For design and governance, the lesson is not simply to add another program or dashboard. It is to recognize grief as signal, feedback, and design material. If we ignore grief at global scales, institutions risk misreading their own signals and becoming less prepared for change. If we design with grief in mind—through recognition rituals, transnational protocols for loss, and policies that attend to human and ecological continuity, we may strengthen the conditions for cooperation, legitimacy, and regeneration.

4.3 Why we fail to design for grief

If grief is as common and systemic as the evidence suggests, my question is: why do our institutions so rarely design for it? Why does something as basic as loss remain invisible in work, governance, and care.

We see the symptoms of failing to design for grief across multiple areas:

I keep returning to a public health callback. For centuries in Europe, epidemics spread not only because of microbes but because there were no shared arrangements for hygiene. Water was contaminated, waste unmanaged, handwashing sporadic. The Black Death was not inevitable; sanitation simply had not been organized at scale (Cipolla, 1992). Life expectancy rose when everyday practices were paired with civic systems: handwashing in hospitals, potable water, sewers. The analogy is partial, but instructive. We practice physical hygiene every day. We seldom practice what I call mental hygiene: collective habits of reflection, acknowledgment, and ritual that could help metabolize grief before it festers. Unacknowledged loss often behaves like an untreated wound. It inflames, then it infects.

The science points in the same direction. Reflective writing, mindfulness, and reliable social connection correlate with lower stress reactivity and better health outcomes (Pennebaker, 1997; Chida & Steptoe, 2008). People embedded in strong social ties tend to live longer and healthier lives (Holt-Lunstad et al., 2010). If clean water is to the body what safety is to the mind, then everyday practices and proportionate, shared supports might be to resilience what sewers were to public health. Yet most systems still operate as if such supports were optional.

Across cases, I see three mutually reinforcing blind spots that keep grief off the design brief: stigma, incentives, and metaphors. Each one silences grief in a distinct way. Together, they make absence look normal until it resurfaces as burnout, mistrust, protest, or quiet failure.

Stigma

When I look closely, stigma seems to follow grief almost everywhere. It whispers that grief is weakness, inefficiency, or indulgence. Men may be told to toughen up. Women may be expected to carry grief on behalf of families, then criticized if they take too long. Queer and non-binary grief often disappears in heteronormative scripts about who counts as kin. Young people are dismissed as too inexperienced to understand loss, while elders are told they should have already moved on. The message is consistent: grief is only tolerated when it fits a narrow, time-limited script.

That script has shifted over eras. In pre-modern contexts, grief was inseparable from ritual and ceremony, embedded in cycles of season and community (Ariès, 1981). With modernity, it became increasingly privatized and medicalized, recast as an interruption to productivity (Illouz, 2007). In late-modern culture, grief may appear ubiquitous online, yet often in flattened, performative, or commercialized forms (Ahmed, 2004; Papacharissi, 2015).

International and Indigenous perspectives suggest other possibilities. Collectivist traditions often encode grief in shared obligations rather than private pathology (Triandis, 1995). Many Indigenous worldviews situate mourning within webs of more-than-human relations, treating it as continuity work rather than inefficiency (Wilson, 2008; Kimmerer, 2013). To refuse grief in these settings would not be strength but neglect of responsibility.

Philosophers across history have also challenged the idea that grief signals weakness. Cicero, writing after the death of his daughter, described mourning not as indulgence but as an unavoidable part of love and civic life (Tusculan Disputations, 45 BCE/1913). Martha Nussbaum argues that emotions like grief reveal what we most value, making them essential to ethical reasoning rather than irrational excess (Nussbaum, 2001). Camus suggested that grief and absurdity together can awaken clarity about how we wish to live (The Myth of Sisyphus, 1942/1991). These views align with what I have observed in practice: grief does not diminish agency, it can sharpen it.

Policy, however, often encodes stigma into rules. In Canada, bereavement leave is still typically capped at three days, even for the death of a parent or child. On paper this may seem pragmatic. In practice it functions as denial. From a systems perspective, it resembles a “fix that fails” (Senge, 1990): it looks efficient in the short term but generates hidden costs later in absenteeism, presenteeism, burnout, and turnover.

Design and economics amplify the problem. If grief is treated as inefficiency, it rarely enters dashboards, budgets, or key performance indicators. Behavioural economics shows why. The MINDSPACE framework (Dolan et al., 2010) highlights that what is salient

is what receives attention. When grief is absent from institutional language, it remains absent from decision-making. Social norms then reinforce silence: if leaders never name grief, others are unlikely to either.

Causal Layered Analysis helps situate stigma across depth (Inayatullah, 1998). At the litany level, it appears in leave policies or awkward silences. At the systemic level, it grows out of institutions tuned for efficiency and throughput. At the worldview level, it reflects mechanistic metaphors that frame humans as inputs. At the mythic level, it rests on the story that grief equals weakness. To shift stigma requires interventions at each layer, not only at the surface.

The risks of stigma include over-pathologizing grief. As shown in the Figure 4. below, when it is treated primarily as medical defect, prescriptions often replace therapy, ritual, or community. Short-term relief may come, yet dependency grows when grief's social and relational dimensions are ignored. From a systems view, this creates reinforcing loops: stigma drives suppression, suppression drives medicalization, medicalization fosters reliance, and the grief itself remains unresolved.

For me, the larger point is that grief is not weakness. History offers reminders. After the Great Depression, collective mourning for livelihoods and dignity seeded social safety nets in many democracies. After apartheid, grief in South Africa was channeled into the Truth and Reconciliation Commission, which sought (however imperfectly) to anchor legitimacy in acknowledgment. Even in artistic traditions, from blues to fado, grief has generated new forms of cultural resilience rather than collapse. To frame grief as inefficiency is to miss its role as signal, teacher, and sometimes catalyst for repair.

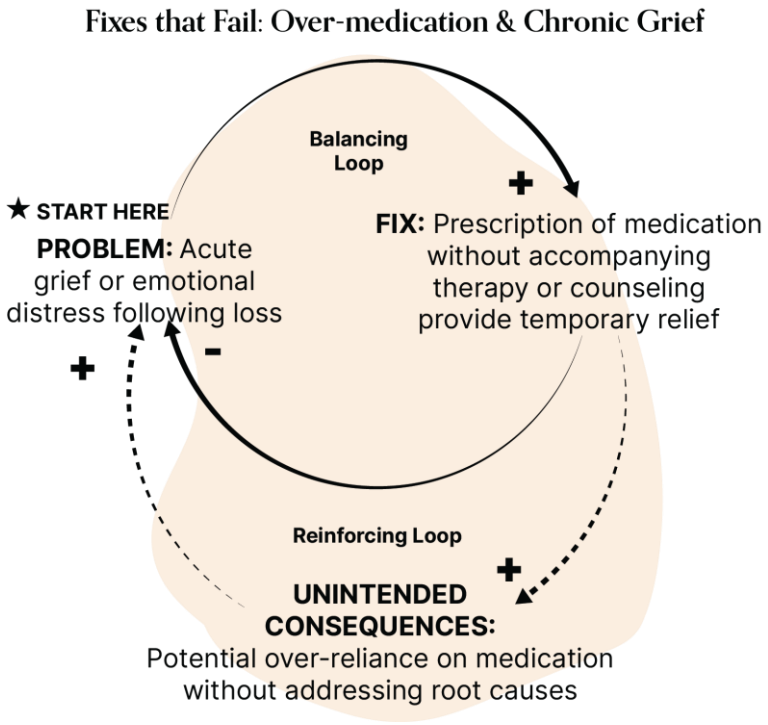


Figure 4.6: ***A depiction of systems archetype Fixes that Fail:*** *Over-medication and chronic grief. Medication on its own may calm symptoms in the short term, yet it can also create reliance and leave root causes untouched, allowing distress to resurface over time. Pair symptom relief with therapy, support, and grief work so the system can recover rather than recycle the problem*

Incentives

I have noticed that stigma does not survive on attitudes alone. It is reinforced by incentives and institutional design. Most workplaces, schools, and public systems are built in ways that make acknowledgment harder rather than easier. Behavioral models help explain why. MINDSPACE shows how norms, messengers, and affect shape what feels legitimate: composure is rewarded, speed is praised, and silence is often interpreted as professionalism (Dolan et al., 2010). COM-B helps me see that capability, opportunity, and motivation to grieve are constrained by context. If leaders never create legitimate opportunities for mourning, expression does not feel safe, even when the need is obvious (Michie et al., 2011).

Hirschman's *exit, voice, and loyalty* adds another layer. In many institutions, grief has no voice channel. It is rarely designed into performance reviews, HR frameworks, or feedback loops. People either exit quietly through attrition, presenteeism, or disengagement, or they stay loyal at personal cost (Hirschman, 1970). This is not a trivial design flaw. It translates into measurable losses. UK estimates suggest unresolved grief costs employers billions annually through absenteeism, turnover, and lost productivity (Black, 2020).

Systems theory offers a sharper lens here. I often think of the *accidental adversaries* archetype (Senge, 1990), as depicted below in Figure 4.. The push for productivity drives organizations to demand more from employees, often tightening deadlines and raising expectations. To compensate, some firms introduce mental health days or wellness programs. Yet unintended consequences follow. Employees hesitate to use those benefits because of stigma, myths about "falling behind," or fear of reprisal in competitive environments. Those who work through exhaustion often burn out, creating higher costs for the organization. Ironically, those who take the time off return with greater focus and commitment, generating real value. The loop is self-defeating: the harder organizations push without addressing grief and stress, the more they undercut the very productivity they seek.

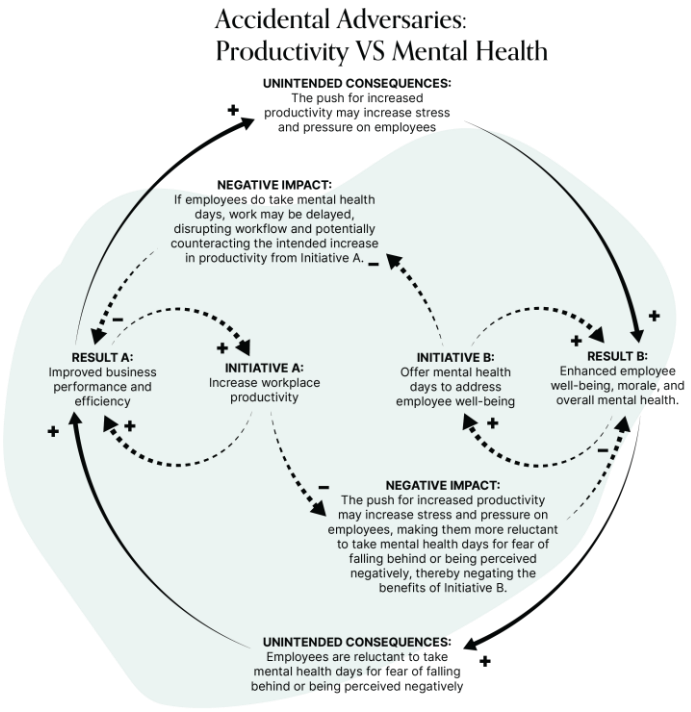


Figure 4.7 : ***Accidental Adversaries:*** *This systems archetype illustrates how a productivity push and mental-health days can cancel each other out when pressure to deliver discourages time off. Time off can slow output, which adds pressure. This shows the importance of aligning goals and adding buffers so performance and well-being reinforce rather than compete.*

Culture magnifies this paradox. I have walked into organizations where the official strategy included "wellness" and "employee care," but the everyday culture equated long hours with loyalty. As Peter Drucker famously put it, "culture eats strategy for breakfast" (Drucker, 2006). Where the culture stigmatizes grief or rest, no policy can compensate. The result is an institutional design where the signals of grief are suppressed until they return as burnout, turnover, or quiet disengagement.

Philosophers have long reflected on this tension between hard work and human needs. Max Weber's analysis of the Protestant work ethic showed how a cultural glorification of unrelenting labor shaped capitalism's rise, embedding productivity as moral duty (Weber, 1905/2002). Simone Weil, writing from the factory floor, argued that denying workers' humanity through mechanical demands was a form of spiritual injury as much as economic exploitation (Weil, 1951). Even Seneca, centuries earlier, cautioned that without pauses and reflection, life collapses into toil that fails to nourish the soul (*On the Shortness of Life*, c. 49 CE/2004). These reflections echo what I have seen: when grief at work is ignored, people may perform tasks but lose their sense of meaning and connection.

Business frameworks can unintentionally reinforce this silence. The Business Model Canvas is elegant in how it maps customers and value, yet it rarely accounts for continuity of care (Osterwalder & Pigneur, 2010). Dynamic capabilities frameworks emphasize how firms adapt to shocks, but they almost never consider how grief, as a systemic force, destabilizes culture and identity (Teece, 2010). Without those dimensions, organizations mistake grief for inefficiency and design it out of sight, even though the costs are substantial and the risks structural.

For me, the lesson is that incentives and structures matter as much as attitudes. If grief is coded as inefficiency, then the mechanisms of organizational design will continue to suppress it. If, instead, it is coded as signal and continuity, then policies, metrics, and

cultures could align in ways that not only prevent loss of talent and trust, but actually deepen the sense of purpose and belonging that drives long-term resilience.

Unequal recognition

I have learned that grief is not distributed evenly, and neither is its recognition. Across history, entire communities have been told that their mourning did not count, or worse, that it was inconvenient. Colonial projects did not simply seize land and resources; they also suppressed the civic rituals that metabolized loss into continuity. Tangihanga, Haudenosaunee condolence ceremonies, and Ainu reciprocity were not decorative practices. They were infrastructures of law, memory, and belonging. To outlaw them was to fracture cosmologies and governance alike (Smith, 1999; Mead, 2003; Ohnuki-Tierney, 1974).

The pattern continues. During the COVID-19 pandemic, I noticed how grief was narrated differently across geographies. Wealthier nations produced daily dashboards of deaths, complete with official briefings and moments of silence. Meanwhile, vaccine inequities left the grief of the Global South comparatively invisible, folded into statistics of "resilience" rather than acknowledged as ongoing bereavement (Bollyky & Bown, 2020). After earthquakes, floods, or typhoons, the frame often follows the same script: communities in the South are praised as resilient, but rarely recognized as grieving. That label of resilience, while well-intentioned, sometimes functions as a rationale for minimal aid and faster withdrawal (Tierney, 2014). The grief remains, uncounted and unlegitimated.

Recognition is also rationed through classification. In many places grief is quickly medicalized, defined by its deviation from "normal" timelines or behaviors. Prolonged grief disorder in ICD-11 may be useful for clinical support, but it also risks pathologizing grief as disease rather than acknowledging it as a relational process. Here stigma and medicalization intersect. Policies that codify three-day bereavement leave or insurance codes that demand diagnostic labels make implicit claims about which griefs matter and which do not. The result resembles the "fixes that fail" archetype (Senge, 1990). Suppressing or medicalizing grief may appear efficient, but it externalizes costs into absenteeism, presenteeism, and mistrust.

Behavioral economics helps clarify how unequal recognition is sustained. The MINDSPACE framework highlights how messengers and norms shape behavior (Dolan et al., 2010). When authority figures downplay certain losses, or when institutions normalize silence, people absorb those cues. Defaults also matter. If the default policy offers only minimal

leave, few will risk requesting more, even when it is desperately needed. Over time, these defaults crystallize into norms that make unequal recognition appear natural.

Strategic foresight and Causal Layered Analysis (Inayatullah, 1998) remind me that stigma and erasure live not only in policies but in metaphors and myths. When some griefs are framed as inefficiency while others are framed as dignity, entire worldviews are reinforced. The grieving parent in one country is honored as a symbol of sacrifice; the grieving parent in another is told to endure quietly. These asymmetries shape whose futures are imagined as worth planning for.

For me, the most sobering realization is that unequal recognition is not only a moral failure but also a systemic risk. When grief is ignored or pathologized for some, it often resurfaces later as political backlash, health inequities, or economic volatility. By contrast, when recognition is extended equitably—across genders, generations, geographies, and cosmologies—it strengthens continuity.

4.4 Toward Designing for Grief in a Measured, Competitive World.

While conducting research, I noticed a few threads, around language, time, rituals, which seemed to exert influence on how we approach grief across societies.

I continue to read the links between measurement, money, power, culture, ideology, time, and trauma as a coupled system that could help explain why contemporary institutions sidestep grief, privatize it, or inadvertently produce it. Rather than a linear chain, the picture feels like a patchwork quilt. The threads of the fabric of this hypothetical quilt are what I will refer to as our *deep code*: background assumptions, metaphors, and imaginaries that program what we notice, value, and build. Deep code is not fixed. It seems shaped by the regimes we use to see the world, and it may be shifted by design.

4.4.1 When numbers stand in for life

Modern institutions often see by counting, and reduce the world to numbers and what is specific, measurable and comparable. States and firms render complex worlds legible through censuses, ledgers, KPIs, and dashboards so they can be administered and optimized. Legibility enables coordination, yet it also erases vernacular knowledge and thick human experience that do not fit the grid (Scott, 1998). When measures become targets, they may corrode the phenomena they represent, a pattern long observed as Goodhart's and Campbell's laws (Goodhart, 1975; Campbell, 1976; Strathern, 1997). In

audit cultures, the measure can displace the meaning. Grief, which is diffuse, relational, and slow, tends to become noise on the dashboard. This is one-way deep code is written: what is counted becomes what counts. This often leaves out deeper nuance. As one popular internet meme observes, Prince Charles and Ozzy Osbourne share the same basic demographic profile; British men born in the late 1940s; yet their lives could hardly be more divergent. One is part of the British monarchy, while the latter is a heavy metal pioneer. The joke works precisely because demographic shorthand conceals as much as it reveals. It reminds us that "on paper" equivalence can obscure profound differences in class, health, culture, and identity. This is why I am wary of demographic drop down menus on websites that reduce complex identities to monoliths. How can selecting "Asian" on a drop down menu describe anything nuanced about identity considering how large Asia is, how divergent human personality is, to the point that two twin siblings, descended from the same parents, living in the same house can have widely divergent personalities, let alone expecting people from different parts of a continent or country to have similar tastes and preferences.

Design implication. Treat metrics as hypotheses rather than facts. Pair them with qualitative signals and rituals, rotate or sunset targets to limit gaming, and place stewardship of measures at arm's length from short-run revenue logics.

4.4.2 From measurement to money to power

Quantification does more than record. Once something is measured, it can be priced. Once priced, it can be owned. Ownership then confers power. As Coase (1960) argued, the distribution of rights and rules decides who absorbs the costs and who is able to pass them along. Ostrom (1990) demonstrated that shared resources can be managed differently when communities establish clear boundaries, local rules, and fair mechanisms of accountability.

When metrics become too narrow, other forms of value fall away. Continuity, memory, ecological care, and grief do not always translate into numbers, and what escapes measurement is easily sidelined. The result is a system that privileges efficiency over relation and control over care.

Design implication. One response is to widen the frame. Benefit–burden maps can make visible who gains and who pays, including non-human lives. A share of efficiency gains could be allocated to repair funds governed by those most affected. Oversight bodies could be empowered to question or veto metrics that mask or minimize harm, ensuring that measurement does not become a substitute for judgment.

4.4.3 Competition, zero-sum beliefs, and the avoidance of loss

At the heart of many contests sits an assumption that one person's gain must come at another's expense. When this worldview dominates, trust can weaken, cooperation can thin, and antagonism rise. Cross-cultural research confirms that strong zero-sum beliefs consistently correlate with lower well-being, reduced generosity, and weaker social cohesion (Różycka-Tran, Boski, & Wojciszke, 2015, 2021).

Cognitive science helps clarify why zero-sum frames persist and why grief is so often pushed aside. Negativity bias makes us pay more attention to potential harms than to equivalent benefits (Baumeister et al., 2001), so admitting grief can feel riskier than suppressing it. Status-quo bias leads groups to cling to familiar routines even when they no longer work (Samuelson & Zeckhauser, 1988), which means institutions often prefer to preserve the appearance of continuity rather than face the disruption that grief represents. Sunk-cost thinking makes it painful to abandon failing designs, since acknowledging loss would also mean acknowledging wasted effort (Arkes & Blumer, 1985). Path dependence then hardens these choices into policy and practice, locking organizations into patterns that treat grief as private burden rather than collective feedback (David, 1985). Taken together, these biases show how losses are displaced or medicalized instead of metabolized into learning.

From a systems perspective, this reflects a deep code that privileges rivalry over reciprocity. Institutions built on this logic often treat grief as inefficiency to be contained rather than as feedback that could guide adaptation. The result is less resilience, not more.

Design implication. Converting competitive surplus into shared value can help shift the frame. Cooperative contracts, common-pool infrastructure, and participatory repair funds are one set of tools. Tracking the prevalence of zero-sum beliefs may even serve as a diagnostic, signaling when institutional cultures are veering toward fragility.

4.4.4 How mechanistic metaphors take hold

I treat metaphors as working maps, not decoration. They seem to guide what I notice, what I count, and what I try next (Lakoff & Johnson, 1980; Midgley, 2003). In foresight terms they sit high in the stack. They shape worldview and frame the kinds of interventions that feel possible before any plan is drafted (Inayatullah, 1998; Meadows, 1999).

When coordination depends on what is visible and countable, I find that **plumbing** and **machine** images become normal. We speak about flow, blockage, leakage, and pressure.

The natural fixes then look like valves, filters, and tighter seals. This style of thinking helps in repeatable domains that really do behave like pipelines. It can also recode **grief as downtime**. Loss looks like a temporary interruption to throughput rather than a cue to slow, redistribute load, or tend relationships (Lakoff & Johnson, 1980; Scott, 1998).

A different map is available. **Biological and ecological** metaphors foreground interdependence, cycles, and recovery. In ecology, resilience often comes from diversity, buffering, and the capacity to reorganize after disturbance (Holling, 1973). In evolution, cooperation has mattered for survival and flourishing. Darwin wrote about social instincts and sympathy in human life, which could advantage groups over time (Darwin, 1871/1981). Margulis showed how major transitions emerged from symbiosis and integration, not competition alone (Margulis, 1981). If I privilege metaphors of cooperation and care, grief reads as a relational rhythm that calls for buffering, repair, and paced return. The same event is no longer a fault in a pipe. It is a signal that a living system needs time and support.

This is why metaphor choice feels ethical as well as technical. Midgley reminds me that the "myths we live by" are selective. Each highlights some facts and hides others, so it is better to hold more than one good story and test consequences (Midgley, 2003). A pipeline map makes leaks salient. A forest map makes soil, diversity, and time salient. The first will tend to reward speed and sealant. The second will tend to reward recovery and stewardship (Lakoff & Johnson, 1980; Inayatullah, 1998).

Design moves I would use

1. Name the map in the brief. If I choose a pipeline, I will note what that hides. If I choose a forest, I will note what that protects (Midgley, 2003; Lakoff & Johnson, 1980).
2. Fit metaphor to domain. Keep mechanistic tools for tightly coupled, repeatable work. Use ecological and cooperative frames where interdependence and emotion are central (Holling, 1973; Scott, 1998).
3. Preserve buffers and cadence. Build cycles for introduction, consolidation, reflection, and rest so grief can be witnessed and integrated, not rushed past (Holling, 1973; Inayatullah, 1998).
4. Keep care visible. Pair quantitative targets with narrative logs of repair and restitution so continuity work remains legitimate, not invisible (Meadows, 1999; Scott, 1998).

Bottom line. Mechanistic metaphors may deliver control and replication. They may also select against redundancy, pacing, and repair. Privileging cooperation and care metaphors

alongside them could help a system perform and also keep its ability to mourn, learn, and renew (Darwin, 1871/1981; Margulis, 1981; Holling, 1973).

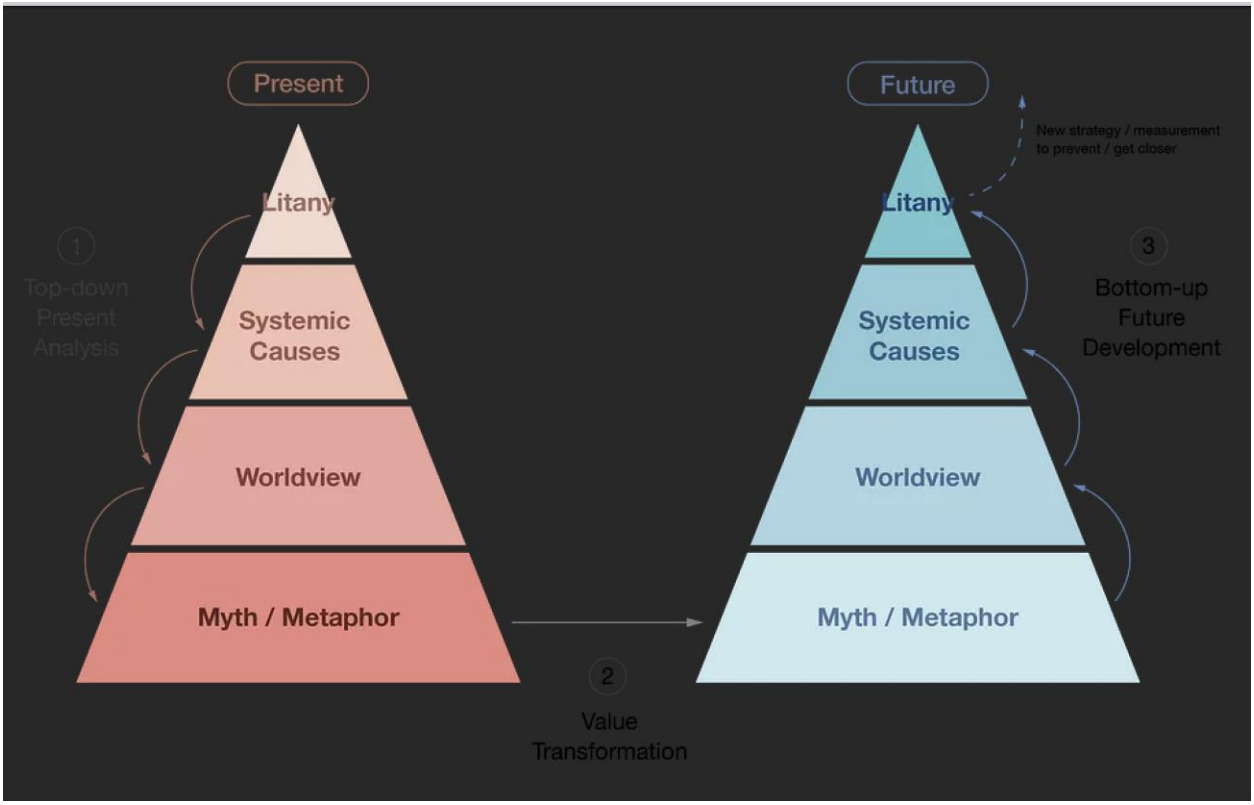


Figure 4.8. ***Causal Layered Analysis (CLA):*** *headlines at the litany level are linked to deeper systemic causes, worldviews, and myths; by working down we may explain the present, and by working out from myth/metaphor we may seed alternative futures. (Source: Hao Wang)*

4.4.5 Imaginaries of the future: dystopia, utopia, and a protopian pivot

When I practice foresight and long-term strategy, I often feel that I am really working with imaginaries as much as with models. The Manoa School reminds us that the future does not only extend in a straight line. Its four archetypes of continuation, collapse, discipline, and transformation offer different lenses for what might unfold (Dator, 2009; Voros, 2001). Continuation imagines more of the same, the linear extension of present trends. Collapse forces us to confront failure, whether ecological, social, or political. Discipline imagines futures shaped by constraint, by rules that bind us more tightly to planetary or social limits. Transformation pictures radical shifts, futures that are qualitatively different from what

came before. Each archetype brings its own emotional register, and I have come to see that grief is processed differently depending on which frame dominates. If we imagine only collapse, grief becomes terminal. If we imagine only continuation, grief may be denied.

Culture stocks our narrative pantry, and what is stocked shapes what feels plausible. In recent decades, dystopias have filled the shelves. Since 2010, dystopian cinema has surged, while explicitly utopian films have been scarce or presented with irony. U.S. box office tagging of "utopia" is inconsistent, so exact counts are fuzzy, but commentators note a strong dystopian tilt relative to utopia across the past twenty years (Jameson, 2005; Parrot Analytics, 2024). That imbalance matters. If we are saturated with collapse, grief risks being read as evidence of finality, not as part of renewal.

Here I find the concept protopia helpful. Kevin Kelly (2011) described protopia as a stance of incremental, situated betterment; neither perfection nor catastrophe, but the possibility of things being slightly better tomorrow than today. Monica Bielskyte (2020) extends this further, connecting protopia to the pluriverse: plural, relational, and culturally grounded futures where care, creativity, and diversity of perspectives are not side notes but starting assumptions. In such a grammar, grief and repair can sit alongside hope without requiring a grand finale. A pluriverse of protopias lets us imagine futures where grief is not an ending but a companion to continuity, reminding us that loss and adaptation travel together.

The design implication is straightforward but profound. If scenario portfolios lean too heavily toward collapse or catastrophe, they flatten the emotional landscape of planning. Alongside risk registers and collapse frames, we might convene protopian studios that build prototypes of small, credible improvements. These would not only identify gains but also name the losses they are meant to ease. Mapping push factors that force change alongside pull factors that magnetize preferred futures keeps the work balanced. It makes the task not only flight from pain but also movement toward shared goods.

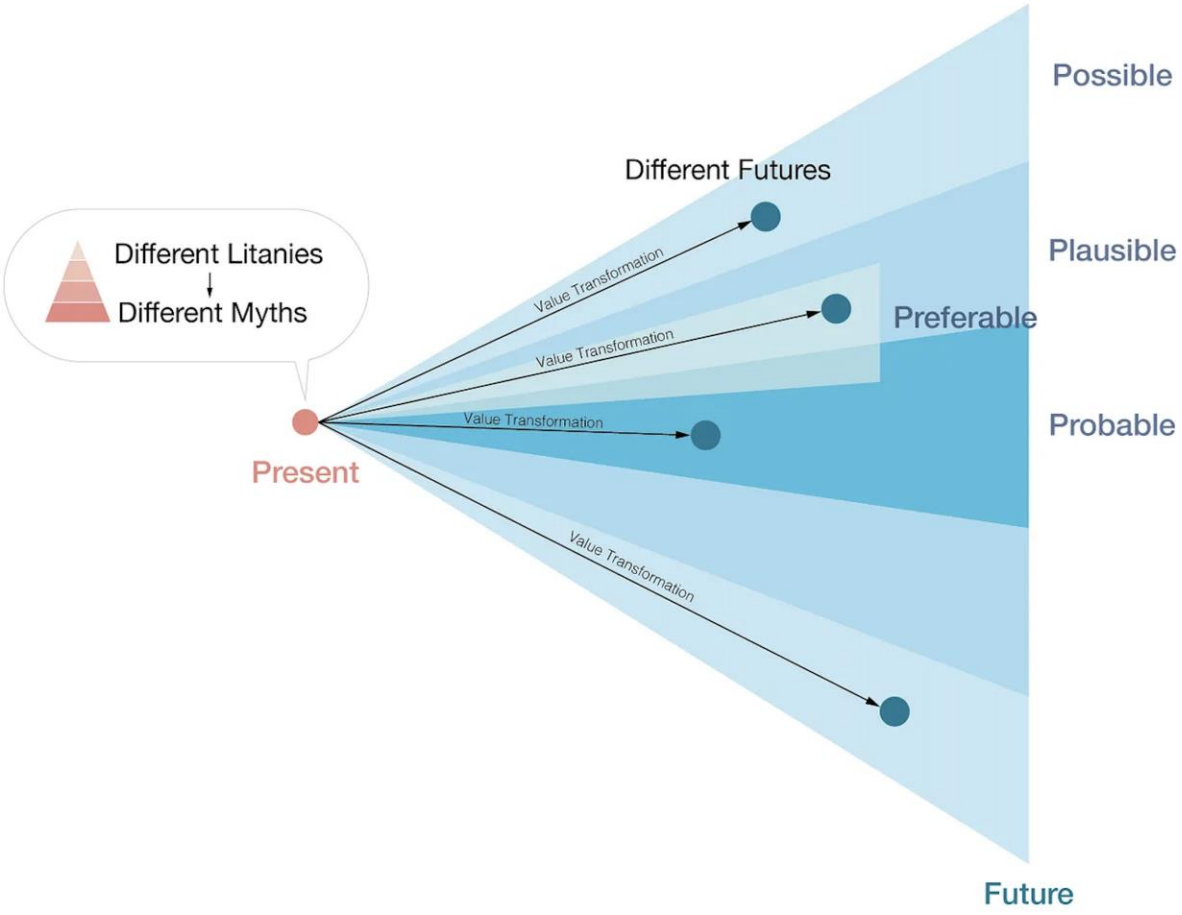


Figure 4.9. ***From CLA to the Futures Cone.*** *When we change the deep stories we use; our myths and metaphors, along with our shared worldviews (what we believe), systems (how things are organized), and the everyday litany (headlines and talk), we change what futures feel likely. These shifts can widen the path beyond the "default" or probable future toward futures that are plausible, possible, and, by shared values, preferable. (Source: Hao Wang)*

4.4.6 Culture, trauma, and dialectical sense-making

Intergenerational trauma reminds me that grief is rarely contained within a single moment or lifetime. Historical shocks reverberate, shaping families biologically through stress pathways and culturally through stories of loss, resilience, and survival (Alexander, 2004; Bowers & Yehuda, 2016; Yehuda et al., 2016). A grandparent's imprisonment, exile, or famine may echo into the risk perception of children and grandchildren, shaping how they

approach uncertainty. In strategic foresight, this matters because it reveals that past grief often shadows future planning, narrowing what feels safe, possible, or legitimate.

Cultural repertoires influence how this inheritance is carried. In some contexts, dyadic, either-or reasoning dominates: grief must be overcome or it becomes weakness. This can be effective for immediate, decisive tasks but brittle in complex social systems. Dialectical and yin–yang reasoning, by contrast, hold apparent opposites together (Peng & Nisbett, 1999). In such contexts, grief can be acknowledged without being seen as an endpoint, allowing communities to oscillate between mourning and renewal without dissonance.

Behavioral economics sharpens the picture. The MINDSPACE framework reminds me that grief is amplified or suppressed through cues embedded in institutions (Dolan et al., 2010). Norms signal what is acceptable, messengers decide which voices are believed, and salience governs what is noticed at all. Defaults are decisive: if organizations assume uninterrupted productivity, grief disappears from view. If the default includes recognition, pacing, or closure rituals, grief becomes integrated into the culture. Policy designs that overlook these behavioral dynamics often misread the lived costs of loss.

Indigenous perspectives on data sovereignty and relational ontology add another crucial dimension. They insist that accountability belongs not only to present stakeholders but also to ancestors, land, and future generations (Kukutai & Taylor, 2016; Tsing, 2015). From this perspective, grief is not an inefficiency but a call to repair obligations left unmet. It expands whose loss is counted, and whose continuity is designed for.

History offers reminders of how these inheritances shape collective policy. The trauma of apartheid in South Africa, for example, seeded demands for truth-telling mechanisms that went beyond trials, embedding acknowledgment into political transition. In South Korea, grief from past authoritarian repression continues to shape citizen movements for transparency and rights. In both cases, grief carried across generations became not only a private inheritance but also a driver of civic design, influencing legal frameworks and institutional reform.

Design implication. Fund cultural humility as a core capability, not an afterthought. This means building resources for interpretation, translation, and rotating facilitation, as well as creating spaces where those most affected co-create ritual and meaning. It also means governing data and narratives relationally, embedding grief into local and global institutions as knowledge to be acted upon rather than pathology to be hidden.

4.4.7 Gendered norms, inequality, and tribal boundaries as deep-code shapers

Deep code is also written by gender regimes, class structure, and boundary drawing. History suggests that grief work has been feminized and privatized: care, mourning, and emotional labor are expected yet undervalued, while masculine norms of stoicism discourage help-seeking and public acknowledgment of loss (Hochschild, 1983; Noddings, 1984; Butler, 2004; Courtenay, 2000; Addis & Mahalik, 2003). When care is naturalized as "women's work," it tends not to be counted in the very systems that allocate status and resources, which keeps grief outside the spreadsheet (Fraser, 2016; Tronto, 1993). This does not indict any group; it names a pattern that likely narrows institutional repertoires for metabolizing loss.

Inequality and wealth concentration appear to amplify the problem. Comparative research links higher inequality to worse social outcomes and lower trust, including indicators plausibly related to unprocessed grief such as violence and "deaths of despair" (Wilkinson & Pickett, 2009; Case & Deaton, 2020; Piketty, 2014, 2020; Milanović, 2016). Political-economy lenses would suggest that when the benefits of change are privatized and the costs dispersed, grief is likely to be externalized to those with the least voice. Tribal boundaries add a further layer. Minimal-group experiments and social identity theory show how quickly in-group bias forms (Tajfel & Turner, 1979). Models of parochial altruism and identity economics suggest why people may accept harm to out-groups while caring for their own group's losses (Choi & Bowles, 2007; Akerlof & Kranton, 2000).

Even if one were to bracket moral claims, the instrumental case may still hold. Psychological safety predicts error reporting and team performance in complex settings (Edmondson, 1999, 2018). Co-operative governance of shared resources can outperform centralized command or pure markets under the right design principles (Ostrom, 1990). Good management practices that include voice and learning correlate with productivity (Bloom & Van Reenen, 2007). In this light, grief-literate design might be read as risk management and performance hygiene rather than charity.

Design implication. Make emotional labor visible and shared. Budget for care and closure as part of delivery, not as after-hours work. Normalize help-seeking for all genders. Evaluate distributional effects explicitly so that burdens do not settle on those with the least formal power. Design boundary-crossing forums that reduce moral distance.

4.4.8 Deep code: what drives it and how it might shift

By deep code I mean the subterranean patterns that can make some futures imaginable and others unthinkable. Causal Layered Analysis reminds us that beneath events and systems lie worldviews and myths, and that it is those bottom layers that often govern what feels natural or inevitable (Inayatullah, 1998). Taylor (2004) calls this the "social imaginary": the background sense of order that normalizes ideals like the productive, fit, and happy citizen. Williams's "structures of feeling" describe the atmospheres that artists and communities intuit before institutions ever formalize them.

Deep code, while abstract, appears to be shaped by measurement regimes that define what counts, by market logics that reward efficiency, by governance structures that allocate rights unevenly, by histories of trauma that echo forward, by the availability of stories and metaphors that people can reach for, and by the hierarchies of gender and class that determine whose labor and whose grief are acknowledged. It is also anchored in philosophy: in concepts raised earlier in this paper: Aristotle's vision of the good life, in Confucian attention to civic mourning, in Enlightenment ideals of progress. These are not neutral but can be considered operating systems that tune how we treat loss, care, and continuity. Deep code can shape how individuals and communities perceive and respond to grief.

How might deep code shift? Systems theory suggests that leverage points lie not only in parameters but in the goals of the system, and even more in the capacity to question and transcend paradigms themselves (Meadows, 1999, 2008). That is daunting, but it is not mystical. Stories, rituals, and metrics are among the everyday levers. Commissioning new narratives can change what grief means in public. Shifting metaphors in policy from "recovery" as a return to normal to "adaptation" as a rhythm alters what institutions aim for. Reassigning rule-making to those directly affected makes different priorities visible. Normalizing care as productive work disrupts old hierarchies of value. And tracking costs that are usually unseen, like absenteeism from unresolved grief exposes what markets and dashboards have ignored.

If deep code quietly constrains our imagination, then deliberate acts of storytelling, ritual, and design may widen it. The task is not to replace one paradigm with another but to create room for more than one story of what continuity might mean.

4.4.9 Why harm may persist even when grief is powerful

Despite acknowledgement of grief, humans still carry out actions which cause grief at various scales; from rude comments to destruction of a forest. Several mechanisms seem to make harm feel instrumentally or morally necessary even where grief is potent, which makes attributing moral identities challenging even though causing unnecessary harm to other life forms seems ethically objectionable in many contexts.

- Zero-sum lenses correlate with lower trust and cooperative intent, pushing groups to defend status and resources even at social cost (Różycka-Tran et al., 2015, 2021).
- Affective forecasting errors lead actors to mispredict the relief certain outcomes will bring and to discount the emotional externalities imposed on others (Gilbert & Wilson, 2000).
- Institutional incentives reward visible wins and suppress slow-burn losses; as sociotechnical infrastructures scale, grief is offloaded onto distant communities (Gillespie, 2018; Coase, 1960).
- Path dependence and sunk costs trap organizations on harmful trajectories because acknowledging error threatens identity and status (David, 1985; Arkes & Blumer, 1985).
- Social identity dynamics and parochial altruism privilege in-group welfare, particularly under perceived threat (Tajfel & Turner, 1979; Choi & Bowles, 2007).

These do not require bad actors. They look like features of deep code and its incentive gradients.

4.4.10 Dark and light: An argument against constant positivity

what traditions suggest about “the good state” The interplay between dark and light is more than metaphor. Philosophers across traditions have long warned against trying to engineer life as permanent sunshine. Aristotle reminds me that flourishing is not about constant cheer but about practicing virtue across a whole life where fortune, suffering, and grief matter. Loss can clarify the good by showing us what we truly love (Aristotle, trans. 2009). The Stoics also valued tranquility, but they did not deny sorrow. They practiced seeing loss as part of nature so that care could be steadier and less brittle (Epictetus, trans. 2008; Seneca, trans. 2014). Buddhist traditions begin from the fact of *dukkha* - suffering and impermanence, and ask not how to erase it, but how to meet it with compassion and equanimity. David Ing exposed me to Daoist and Confucian sources emphasizing balance and harmony, filling and emptying, where yin and yang are dyadic complements rather than enemies, which helped illustrate the interplay between grief and

other emotions. Existentialists go further, suggesting that awareness of mortality is not a curse but a condition for authenticity and meaning (Kierkegaard, 1980; Camus, 1955; Frankl, 2006).

Modern psychology echoes these insights. Research on well-being suggests that people have dynamic set-points: moods fluctuate, but life events and practices shift trajectories over time (Diener, Lucas, & Scollon, 2006). Overvaluing happiness can actually backfire, while acceptance of negative emotion predicts better health (Mauss et al., 2011; Ford et al., 2018). Studies show that mixed emotions such as joy tempered by sorrow, grief softened by love can be adaptive, helping people cope and learn (Larsen, McGraw, & Cacioppo, 2001). Jung described individuation as the integration of shadow as well as light, warning that disowned sorrow tends to return as rigidity, symptoms, or projections (Jung, 1959/1968).

Popular culture keeps pointing to these tensions. Radiohead's "Fitter Happier" recites a checklist of optimized life that sounds like quiet despair. Films from *Brazil* to *Pleasantville* and *Equilibrium* satirize sanitized worlds that cannot accommodate loss. Given the box-office tilt toward dystopia and the scarcity of explicit utopias, it may be prudent to commission stories that model protopian maintenance, repair, and small betterments rather than only terminal collapse or saccharine perfection (Jameson, 2005; Parrot Analytics, 2024; Kelly, 2011).

What does this mean for design and policy? If philosophers and psychologists converge on one point, it is that an ideal state is not endless positivity but balance, equanimity, and capable contentment in which grief has a place. Systems are stronger when they allow for both contraction and expansion, both mourning and celebration. In practice, that might mean workplaces that pair wellness programs with rituals of acknowledgment, not only incentives for cheer. It might mean classrooms where students can reflect on losses alongside achievements, rather than being pushed toward constant performance. It might mean cities that invest in both playgrounds and memorial spaces, treating each as civic infrastructure. For policy-makers, the lesson is clear: grief is not a deviation from equilibrium but one of the processes through which equilibrium is recalibrated. What we define as equilibrium will vary from person to person and society to society. This definition is often shaped strongly by prevailing mindsets and metaphors, which the following section aims to explain in more detail.

4.4.11 Grief in Music, Onstage and Off

Music has long been a grief technology. It might name loss, release it, and turn sorrow into continuity. Yet inside the industry through work with Pathwaves and more (Stein, Black, Rawlings, Hossain), I often see the opposite. While songs may help societies metabolize grief, the system itself could manufacture grief through precarity, extraction, and exhaustion (Hesmondhalgh & Baker, 2011; Gross & Musgrave, 2020).

Where the hurt may start

- **Art reduced to dashboards:** Artist value is tallied in monthly listeners, skip rates, and "engagement minutes." The metric tail might wag the creative dog, nudging short hooks, rapid release cadences, and endless "content," which could crowd out risk and craft as evidenced by numerous content creators in the Instagram and YouTube music spaces citing burnout from content production as a reason to take breaks from the industry, sometimes even permanently.
  (Baym, 2018; Hesmondhalgh, 2013; Negus, 1999),
  Gatekeeping and buy-ons: Early-career artists may pay to join tours, front venue guarantees, or accept "all-in" festival deals, and even at higher levels, artists may be restricted from collaborations, touring certain venues due to exclusivity rights and impacted (either positively or negatively) by agency influence on festival lineups. The lesson taught could be scarcity rather than merit, reinforcing structural disenfranchisement (Shuker, 2016; Hesmondhalgh & Baker, 2011).
- **Contracts and control:** Recoupment, catalog ownership, and cross-collateralization might trap artists for cycles. Autonomy can become a memory they grieve (Hesmondhalgh & Baker, 2011; Negus, 1999).
- **Touring as treadmill:** Thin digital royalties may shift risk toward the road. Constant touring could fix cash flow in the short term while deepening the long-term crisis, a "fixes that fail" pattern from systems thinking (Senge, 1990; Gross & Musgrave, 2020).

What grief might make possible

Music also stages public ritual. Albums and shows can become ceremonies where private pain turns into shared meaning. Songs may prove to be effective catharsis and social bonding particularly in a live music context, with people singing their favourite songs together, reliving memories, emotions and creating new ones. Fans may mourn artists and eras as parts of themselves, since fandom often binds to identity (Sandvoss, 2005). Cobain's death reads as a generational shift, with books, documentaries, and mass

gatherings marking the event; Cornell's death could be seen as reopening conversations about depression and care across scenes (Cross, 2001; Reiff, 2020).

Quick snapshots

- A jazz trio trims track length and edits teaser videos to satisfy metrics, then grieves the loss of long-form improvisation (Baym, 2018).
- An indie singer buys onto a tour, sells merch to break even, and returns home with debt and tendonitis, a pattern consistent with precarity research in creative labor (Hesmondhalgh & Baker, 2011; Gross & Musgrave, 2020).
- A veteran band declines a venue with high merch cuts and plays a community hall instead; the show feels like ceremony again and could rebuild reciprocity with fans (Hesmondhalgh, 2013; Sandvoss, 2005).

Design prompts

- **Platforms:** Reward depth. Weight completions, repeats, and album plays. Offer memorial modes that preserve context and lineage so catalogs might function as living cultural memory, not disposable content (Baym, 2018; Hesmondhalgh, 2013).
- **Venues and festivals:** Publish transparent fee and merch policies. Provide quiet rooms, humane load-ins, and recovery days in routing to reduce harm that often accrues to artists and crews (Gross & Musgrave, 2020).
- **Labels and managers:** Default to artist-first contracts. Treat mental health, childcare, and time-off as non-negotiable line items so sustainability could improve (Hesmondhalgh & Baker, 2011).
- **Public policy:** Fund independent venues and community music education as cultural infrastructure. Recognize public mourning around artists as part of civic life (Hesmondhalgh, 2013; Sandvoss, 2005).
- **Practice:** Encourage seasonality in release and tour calendars so recovery becomes part of the creative rhythm, not an exception (Gross & Musgrave, 2020).

As an artist and collaborator, I see these loops as designable. If incentives, routes, and rules change, the same system that converts grief into content might start converting grief into care.

4.5 Cultural and Social Foundations Underpinning our Mindsets

In exploring dynamics across social, technological, economic, environmental, political, legal, educational and art based domains, several patterns emerged across cultures and geographies around behavioural economics and the factors that can subconsciously influence our actions. They involved the language we use, how we observe time, as well as rituals.

4.5.1 Mindsets: Why our metaphors matter

As I worked through this research, I kept returning to metaphors. They did not feel like ornaments. They seemed more like cognitive engines that let me act in complexity. A metaphor maps structure from something familiar to something newer, which helps us draw inferences quickly and often without noticing (Lakoff & Johnson, 1980; Gentner, 1983). Frames then make some features salient and hide others, shaping what publics and policymakers treat as actionable (Entman, 1993). In systems terms, metaphors may sit high on the leverage ladder because they influence goals and rules quietly (Meadows, 2008). In foresight, they appear to live at myth and worldview layers where futures are pre-structured before any scenario is written (Inayatullah, 1998). Mary Midgley's reminder guides me here: the myths we live by are not lies but working maps; the task is to choose better maps and to keep more than one in play (Midgley, 2003). If the map is off, the blueprint that follows is likely to drift as well.

How eras trained my metaphors

Premodern worlds often borrowed from cosmos and kin. Seasons, rivers, and bodies provided images for order and repair. Grief was held through ritual cycles that tied families,

ancestors, and land, which made loss a shared responsibility rather than a private defect (Ariès, 1981; Wilson, 2008).

Modernity pivoted toward mechanism. Enlightenment rationalism and industrial organization favored machines, pipelines, and control. Taylorism encouraged standardizing human variation rather than designing with it (Taylor, 1911). Inside that grammar, grief tends to read as downtime.

Postmodern life added networks, code, and brands. Attention became currency and affect became a commodity. Grief could be trivialized or leveraged as social capital, which risks spectacle without repair. Platforms accelerated the travel of frames. A single image might move from meme to policy in a news cycle.

The metaphors I see most

Mechanistic images. Workers become human capital. Economies bounce back like springs. Schools valorize grit as unflinching persistence. In this register, grief looks like error in a throughput model. AI-driven redundancies illustrate the point. Decades of tacit skill are reframed as inefficiency, and the relational knowledge inside communities of practice quietly disappears. The intervention that feels natural here is optimization and return to normal.

War and competition images. We fight cancer. We wage war on drugs. Firms battle for market share. These frames can mobilize urgency, yet they also normalize exhaustion and recast loss as failure, which obscures the need for recovery and repair (Lakoff & Johnson, 1980). Rhetoric about winning an AI race seems to invite collateral damage to people, ecosystems, and trust. In this register, grieving the loss of work or identity can be framed as falling behind rather than as a signal of structural imbalance.

Ecological and relational images. Forests metabolize decay into soil. Rivers change course and create new habitats. Resilience in ecosystems appears to come from buffers,

diversity, and feedback rather than rigidity (Holling, 1973; Meadows, 2008; Capra & Luisi, 2014; Ostrom, 1990). These images invite me to read grief as transformation rather than waste. The interventions that feel natural are rituals, paced return, and regenerative policies. A displaced worker is not a disposable part. Prior expertise could be honored through re-skilling that weaves tacit knowledge into new roles. Indigenous teachings align here, since kinship with land and ancestors already codes mourning as continuity work, not pathology (Kimmerer, 2013; Wilson, 2008).

How metaphors become practice

Metaphors rarely stay in language. They seem to acquire operational afterlives. A pipeline image of grief often produces fixed-day bereavement leave and back to normal slogans. A battle image tends to produce dashboards that treat mourning families as friction in bed turnover. An ecological image is more likely to produce repertoires of acknowledgment and paced return. I see the contrast in real cases. South Africa's Truth and Reconciliation Commission treated grief as civic process through testimony and ritual, which helped convert rupture into deliberation, if imperfectly (Tutu, 1999). In Aotearoa New Zealand, public rituals after the Christchurch mosque attacks drew on Māori and Islamic practices before policy followed, which seemed to shape legitimacy for subsequent steps (Lamusse, 2019).

Why this matters for systems, foresight, and design

In systems work, metaphors influence which loops we notice. Battle frames privilege escalation levers. Ecological frames make buffers and cadence visible. In foresight, metaphors pre-sort plausible futures. If loss is coded as inefficiency, scenarios will likely favor speed over recovery. In design and service design, metaphors guide briefs and blueprints. Mechanistic frames often generate optimization roadmaps and return-to-baseline targets. Ecological frames more often generate closure rituals, handover protocols, and cadence design. Midgley's pluralism adds a practical rule I try to keep: hold more than one good story, test which yields humane and workable consequences, and be willing to revise the map when the ground changes (Midgley, 2003).

Shifting the scaffolding

These dominant images have deep roots in rationalist and industrial worldviews, which may explain why they persist. They can shift, and I already see pockets of practice where they do. Indigenous philosophies that embed reciprocity, feminist theories that foreground care, and ecological economics that value regeneration overgrowth offer alternate scaffolding. Cognitive studies suggest that carefully chosen counter-metaphors can move policy preferences. When crime is framed as a virus rather than a beast, support tends to

tilt toward prevention rather than punishment, which is a small but telling example of metaphor steering governance choice (Thibodeau & Boroditsky, 2011). In Midgley's terms, this is the ongoing work of revising our living myths, not abandoning meaning for neutrality.

For me, the lesson is simple and practical. Metaphors are not decorative. They set the boundaries of what counts as real, distribute tacit knowledge across teams, and help decide whether grief is held or denied (Nousala, 2016). When loss is framed as pathology or inefficiency, institutions tend to suppress it. When it is framed as pedagogy, metabolism, or continuity work, we seem more likely to design supports that carry it. In the chapters that follow I point to places where a change in image preceded a change in practice, and to places where it did not, so the argument stays grounded and testable.

4.5.2 Time: grief's slow metabolism, temporal stacking, and institutional clocks

Working with communities and organizations, I kept noticing a blind spot that seemed to run through everything else. Grief does not keep time with markets, elections, or quarterly reports. It lingers, loops back, and metabolizes on scales that most institutions are not built to hold. I offer this cautiously, yet the pattern has been hard to ignore.

Psychology points in the same direction. Grief often resurfaces at anniversaries and can return in embodied ways years after an initial loss (Bonanno, 2009). Clinicians describe anticipatory grief, the mourning that begins before an ending, whether for a loved one, a coastline, or a species fading from view (Rando, 2000; Cunsolo & Ellis, 2018). Time is cultural as much as chronological. Daoist philosophy pairs stillness and movement; absence and renewal interpenetrate rather than oppose each other (Chen, 2006). Indigenous teachings extend obligation to ancestors and descendants, stretching responsibility beyond a single life (Wilson, 2008; Simpson, 2017). Ritual calendars such as Obon in Japan or Día de los Muertos in Mexico embed remembrance into seasonal return, not only into the aftermath of death (Nelson, 2006; Brandes, 2006). These traditions nudge me to read grief not only as a line through time but as a layered cycle of attention and repair.

Temporal stacking: how past, present, and future pile up

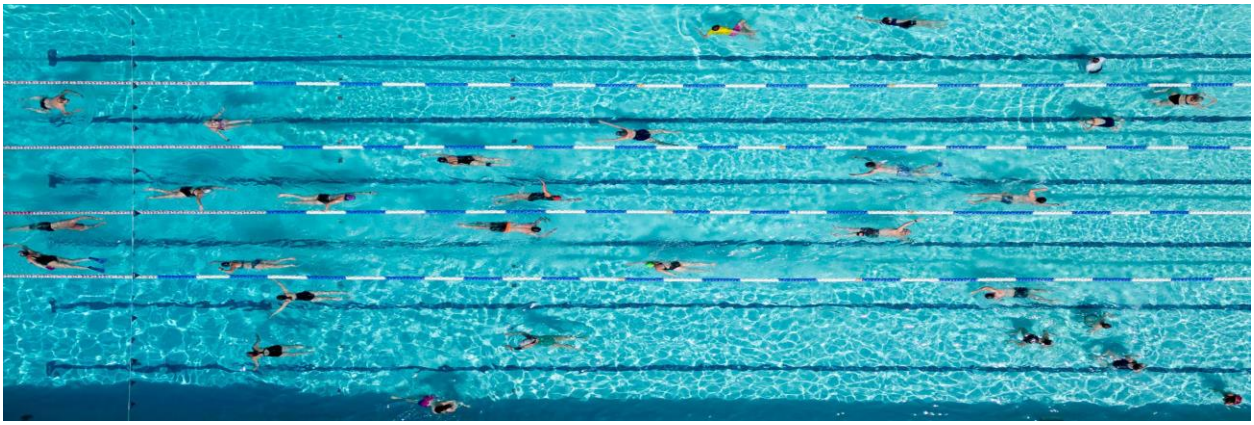
By temporal stacking I mean the way losses and threats from different horizons accumulate and interact. A person can carry the memory of past loss, the strain of present demand, and the anticipation of future rupture at the same time. Communities and nations do the same through collective memory, live shocks, and feared futures. Temporal stacking draws on life course research, time perspective, and collective memory. Past

events shape present appraisals and future discounting; cultures store losses in institutions and narratives that can re-activate under stress (Elder, 1998; Zimbardo & Boyd, 1999, 2008; Halbwachs, 1992; Assmann, 2011).

- **Past.** Postmemory and civic remembrance keep grief active across generations, which can guide identity, vigilance, and claims for redress (Hirsch, 2008; Erikson, 1976). Policy path dependence then turns yesterday's programs into today's constraints and expectations (Pierson, 2004).
- **Present.** Acute stress narrows attention and loads working memory. Allostatic load accumulates when recovery windows are missing, which increases error and burnout (McEwen, 2004). Organizations feel this as bandwidth limits and change fatigue.
- **Future.** Anticipatory grief links expected losses to current choices. People shorten horizons or demand stronger safety cues. Communities facing climate loss often withhold consent until futures feel livable, which is a rational stance rather than obstruction (Cunsolo & Ellis, 2018). In international relations, historic grievance and future threat stack into present posture, affecting alliance preferences and legitimacy claims (Olick, 2007).

Temporal stacking suggests that people and polities are juggling layered clocks that can amplify or dampen one another.

4.5.3 Pacing as a systems property



Systems thinking helps explain why timing matters. Delays, buffers, and recovery cycles shape stability; when we compress or ignore them, oscillation and brittleness increase (Meadows, 2008; Sterman, 2000). Panarchy models link release and reorganization; rushing reorganization often reproduces fragility, while honoring recovery can seed renewal (Holling, 1973; Gunderson & Holling, 2002). Social acceleration research adds that institutional tempos have quickened while bodies and ecologies have not, which widens the gap (Rosa, 2013). In foresight, Three Horizons and Causal Layered Analysis make the same point differently. Endings, turbulence, and emergence need distinct cadences, and deep stories can hold grief long after surface metrics have recovered (Sharpe et al., 2016; Inayatullah, 1998).

Norms and defaults: a behavioral lens on time

Behavioral economics adds practical levers. Present bias and hyperbolic discounting make short timelines feel compelling even when long timelines would serve continuity better (Laibson, 1997; Frederick, Loewenstein, & O'Donoghue, 2002). MINDSPACE helps name why grief so often disappears in planning.

- **Messenger.** Who acknowledges loss matters; a respected leader naming it can legitimize pacing more than a policy memo can.
- **Incentives.** Small, immediate costs of pausing are overweighted against delayed benefits of stability, which tilts choices away from recovery windows.
- **Norms.** If the visible norm is stoic speed, people infer that pausing is unsafe.
- **Defaults.** A three-day leave is a temporal default; many will stick with it because defaults signal what is expected (Dolan et al., 2010; Johnson & Goldstein, 2003).
- **Salience and Priming.** Sentinel dates, anniversaries, and seasonal rituals increase salience of support.

- **Affect.** Calm, dignified rituals can downshift arousal and reduce error risk.
- **Commitments and Ego.** Team compacts that pre-commit to paced return protect identity as competent while allowing oscillation.

These elements suggest low-cost designs: automatic opt-ins to follow-up supports at one, three, and twelve months; calendar prompts for leaders at likely reactivation points; default flexible scheduling after major loss with easy opt-out rather than opt-in.

Two cultural clocks: grief-averse and grief-engaging contexts

Context matters. In much of Canada and the broader Anglosphere, mourning is often privatized, which aligns with Ariès' account of modernity shrinking public grief and with workplace norms that privilege composure and speed (Ariès, 1981; Howarth, 2007). Defaults tend to be minimalist: limited leave, sparse ritual, and dashboards that track absence but not acknowledgment. MINDSPACE helps explain persistence. Stoic norms, narrow defaults, and short incentive cycles make longer pacing feel illegitimate even when teams would benefit.

Mexico offers a contrasting public grammar. Día de los Muertos functions as an annual default for remembrance. Homes and plazas host ofrendas; schools and media ritualize continuity; the whole environment cues collective return to memory (Brandes, 2006). These practices do not erase pain. They normalize oscillation between sorrow and celebration, which may reduce the stigma of returning to grief over time. Japan's Obon and other ritual calendars appear to play similar roles by embedding cyclical time in civic life (Nelson, 2006). I do not assume uniformity within countries, yet these contrasts help me see how norms and defaults quietly script time.

Long horizons by design

Cultures that practice long horizons show what alignment can look like. Cree and Métis teachings on seven-generation stewardship, the slow labor of cathedral building in Europe, Edo-period forestry cycles, and China's Dujiangyan irrigation system still functioning after two millennia suggest that continuity grows when social clocks are tuned to ecological and cultural time (Deloria, 1994; Corntassel, 2012; Totman, 1989; Knight, 2010; Needham & Wang, 1956; Krznaric, 2020). In my projects I kept hearing what I called bandwidth grief. Leaders described the weight of past failures, the strain of present demands, and the dread of the next disruption. Psychology names parts of this allostatic load, the cost of carrying chronic stress without adequate recovery (McEwen, 2004). What I saw looked like grief stacked across temporal layers. No three-day policy, quarterly plan, or annual report could plausibly absorb it.

The lesson I draw is modest. Systems that compress loss into short timelines tend to confuse speed with stability. Systems that stretch time to accommodate grief create room for continuity. Designing with this in mind might mean aligning clocks with human and ecological rhythms, adding rituals and pauses as buffers, setting grief-aware defaults, and planning beyond our own tenures. In the pages that follow I test small versions of this idea. Shifts in cadence, recognition at sentinel dates, seasonal returns, and handovers that mark endings as carefully as beginnings.

What temporal stacking implies for practice

- **Design.** Treat time as a design material. Build oscillation into schedules. Mark endings with handovers and memorial protocols. Create sentinel dates for check-ins at one month, six months, and a year to match common reactivation points. Use seasonal cadence where it fits.
- **Policy.** Add temporal impact assessments. Stage benefits and obligations over realistic grief horizons. Pair recognition with material repair so symbolic time and structural time move together (Pierson, 2004; Jacobs, 2011). Set grief-aware defaults that invite, rather than require, continued support.
- **Cognition and the self.** Expect narrowed attention during acute periods and simplify choice environments. Shorten feedback loops and reduce error opportunities. Time perspective work suggests that helping people re-balance past, present, and future orientation can improve decision making under loss (Zimbardo & Boyd, 2008).
- **Workplaces and organizations.** Plan for recovery the way you plan for delivery. Use rest-rotation, cross-training, and temporary load shedding as standard protocols. Make grief support opt-out rather than opt-in. Make sentinel dates visible in shared calendars.
- **Institutions and nations.** Align commemorations with reform. Transitional processes work better when acknowledgment travels with policy changes on a time scale that matches intergenerational harm (Coulthard, 2014). Memory institutions can pace national grieving with education, archives, and civic rituals that keep continuity without freezing identity (Nora, 1989; Anderson, 1983).
- **International relations.** Diplomacy has clocks too. Historical grievance and future fear stack into present posture. Apologies, reparations, and memorial diplomacy can lower temperature when paired with credible forward commitments. Climate negotiations that acknowledge loss and damage may unlock cooperation that pure mitigation frames could not, because they address anticipatory grief as well as technical risk.

4.5.4 From human-centered to life-centered design

In 1976, NASA's Viking landers went to Mars to look for life. The instruments were elegant, yet the search criteria were narrow. The mission looked for carbon chemistry, liquid water, and metabolism that resembled our own. Out of the periodic table's possibilities, we mostly sought carbon and water signatures. The negative result may say less about Mars than about us. We may have universalized one local pattern and treated it as the template of life itself (Levin & Straat, 1976; Klein, 1978). I read that as a mirror. What we look for often shapes what we find.

I see human-centered design vulnerable to a similar narrowing. The intent was corrective, a move away from technology for its own sake toward the needs of people. Yet the "human" that anchors the method can drift toward a narrow default. Teams may assume users who are well resourced, neurotypical, and conveniently similar to the designers themselves. The costs look practical, not abstract. Personal protective equipment that fits the average male frame may underprotect many women and smaller-bodied workers; voice interfaces can misrecognize higher-pitched voices; even municipal service patterns can privilege commuter routines over caregiving routes, as redesigns of winter sidewalk clearing have shown (Criado-Perez, 2019). None of these are edge cases. They suggest the category "human" was underspecified in the brief.

Industrial metaphors seem to amplify the drift. People become resources and headcount. Rational actor models define value as calculable utility and treat relationship and memory as noise. Even behavioral economics, for all its nuance, has often positioned emotion as bias to correct rather than information to design with. The culture that results can optimize dashboards and process maps while leaving cadence, mourning, and ecological limits out of scope.

A life-centered orientation widens the aperture. It asks not only what works for a statistically average user, but how a system might participate in the continuity of living systems. The literature has been edging this way for some time, from ecological and systemic design to public-value and regenerative practice (Thackara, 2006; Jones, 2013; Liedtka, Salzman, & Azer, 2021). Praxis exists as well. Wildlife overpasses that reconnect migratory routes, living shorelines that couple flood protection with habitat, and "sponge city" retrofits that hold stormwater in parks and wetlands all treat human safety and more-than-human flourishing as a single design problem rather than a trade-off (Clevenger & Waltho, 2005; Arkema et al., 2013; Yu, 2015). Through this lens, grief begins to read less like inefficiency and more like signal. It may be telling us what has been lost in our relationships with one another and with place, and where repair is due.

Implications I draw for practice

- **Treat metaphor as a design material.** If a project is seeded with machine and pipeline images, the outputs will likely be optimization roadmaps and return-to-baseline targets. Ecological images point toward buffers, diversity, and renewal, which often fit how living systems sustain continuity under stress (Meadows, 2008). I now try to surface operative metaphors early and test alternatives.
- **Design for feedback and cadence.** Systems appear to stabilize when feedback is timely and recovery cycles are respected. That suggests grief-aware defaults such as staged return, scheduled check-ins at sentinel dates, and clear handovers that mark endings as carefully as beginnings. Small pacing choices can act like buffers and may reduce error and attrition.
- **Broaden who and what is in scope.** Human variation is not noise, and local ecologies are not externalities. Bringing caregivers, bereaved staff, and place-based knowledge into early framing tends to surface constraints and tacit expertise before they harden into failure points.
- **Prototype soft forms with hard rules.** Where loss is in play, services seem to need both ritual and regulation. Pairing experiential prototypes that make absence tangible with policy prototypes that adjust hours, thresholds, or data rules appears to change behavior more reliably than either alone.

4.5.5 Ritual, immersion, and durability as infrastructure

As I deepened this research, I began to see rituals not as cultural accessories but as practical carriers of continuity. Anthropology gave me language for what I thought I was noticing. Van Gennep described rites of passage as thresholds that move people from rupture to a new coherence (van Gennep, 1960). Turner added that ritual moments can generate communitas, a felt sense of being-with that temporarily loosens hierarchy and strengthens belonging (Turner, 1969). That picture helped me consider ritual as a civic technology: a patterned way groups might metabolize loss into relationship.

By ritual I mean a repeatable, embodied sequence with a clear beginning and end, shared cues and roles, simple objects, and a time and place that set it apart from the everyday. Weddings, graduations, minutes of silence, oath-taking, memorial services, a team huddle, a weekly family meal, lighting a candle for someone who died, standing for an anthem, even a bell that marks the close of trading are all rituals in this modest sense. They coordinate attention, transmit values, slow time, and make memory social.

Embodied cognition reinforces why this matters. Meaning is not only cognitive; it is somatic and situated (Lakoff & Johnson, 1999). We do not only think grief. We carry it in breath and posture, in the weight of silence, in the texture of a cloth, in the rhythm of a chant. Experimental work suggests that ritualized actions can reduce anxiety and restore a sense of control after disruption (Hobson et al., 2018), while ethnographic research shows how arduous collective rituals build trust through shared cost and synchrony (Xygalatas, 2021). Rituals, in this light, give the body something to do when words or policies would otherwise fail. They turn abstraction into lived pedagogy.

Western readers often ask what this looks like in familiar contexts. Remembrance ceremonies, vigils, and graduation convocations are obvious examples, yet there are quieter forms as well: a call-and-response at the start of a meeting, a bell that opens court, a shared pause before a medical handover. These are not sentimental extras. They are simple designs that stabilize attention and create a threshold between before and after.

I also saw what tends to happen in their absence. Much of contemporary North America seems to prize speed and composure, which can crowd out public grieving. Ariès traced how modernity privatized mourning; Howarth shows how this privatization leaves people without shared scripts when losses scale (Ariès, 1981; Howarth, 2007). Critics of "toxic positivity" argue that enforced cheerfulness can turn grief into a private failure rather than a shared responsibility (Ehrenreich, 2009). From a design perspective, this is not neutrality. It is a choice that often produces brittleness. Without containers, grief circulates underground until it erupts as burnout, mistrust, or fracture.

Systems theory helped me understand the mechanics. Holling's adaptive cycle suggests that renewal depends on cycles of release and reorganization rather than on stasis (Holling, 1973; Gunderson & Holling, 2002). Rituals seem to embody those cycles in human systems. They redistribute emotional load, slow the tempo long enough for reorganization, and create a shared story of what changed. Meadows reminds us that delays and buffers shape stability; rituals can act as buffers in social time, absorbing shocks that would otherwise propagate unchecked (Meadows, 2008). Anticipatory systems research extends the idea. Rituals are not only for metabolizing past loss; they may also rehearse responses to future rupture by strengthening role clarity, trust, and memory before the next disruption arrives (Rosen, 1985/2012; Poli, 2010). In foresight terms, ritual lives at the worldview and myth layers and can reframe what futures feel plausible enough to pursue (Inayatullah, 1998; Candy & Dunagan, 2017).

These insights shaped how I design. Immersion became a way to translate complex systems into felt experience. When people move through sound, image, text, light, and silence together, the argument is carried by the body before it is debated by the mind.

Done with care, immersion may function as a secular ritual. It does not tell people what to feel. It sets conditions where feeling and meaning can be shared, and where a group can pause long enough to see what needs repair.

Philosophy gave me further vocabulary. Heidegger wrote of dwelling as meaning woven into place, which I read as an invitation to make memory architectural and not only archival (Heidegger, 1971). Ricoeur connected memory to narrative and showed how stories metabolize time; ritual, in that sense, is narrative enacted through gesture and material (Ricoeur, 2004). Economics unexpectedly joins the conversation. Pine and Gilmore argued that experiences are a distinct offering; Lipovetsky and Roux reframed luxury as durability and attentiveness rather than mere display (Pine & Gilmore, 1999; Lipovetsky & Roux, 2003). A well-made ritual that carries meaning across years might then be read as a civic luxury worth investing in. In practice, I have found that small material choices can carry disproportionate weight: the heft of a candleholder, the warmth of a wooden table, the resonance of a low bell, the grain of paper that invites a letter to the dead. Material signals say this moment matters.

There are reasonable cautions. Formalizing ritual can slide into performance or commodification. Cultural forms can be appropriated or flattened. To reduce those risks, I try to make three commitments explicit. First, consent and care: participation is invitational, not coerced, and guardianship responsibilities are clear. Second, grounding: forms are co-created with the people who will use them and are referenced to their own traditions where possible. Third, pairing soft and hard elements: a ritual without rule changes can become theater, and a rule change without ritual can miss the human transition it creates.

For design, several implications follow.

- Treat rituals as designable components. Thresholds, roles, cues, and endings can be prototyped the way we prototype services.
- Use temporal anchors. Sentinel dates, seasonal returns, and closing gestures allow grief to oscillate rather than congeal.
- Build in material dignity. Simple, durable objects and textures carry care into form.
- Integrate rituals into service blueprints. Add a moment of recognition to a handover, a consent pause to a workflow, a closure step to a project plan.
- Mind the metaphors. If the operative frame is a pipeline, you will likely design for throughput. If the operative frame is a garden, you will likely design for growth and pruning, rest and return. Metaphor selection is a design choice with downstream effects.

I draw a modest conclusion. Ritual, immersion, and durability are not decorative. They appear to act like social infrastructure for resilience. Where they exist, loss is more likely to be carried without breaking trust. Where they are absent, denial tends to corrode legitimacy. Rituals do not solve grief. They teach us how to live with it, together, and they give institutions a chance to pace themselves to human time.

4.5.6 Technology, AI, and post-biological futures

When I first worked in software and digital design, I was struck by a simple tension. The tools felt frictionless on the surface while quietly reshaping daily rhythms underneath. Grief seemed to follow the same pattern. Mourning now travels through platforms as often as through families or neighborhoods. These systems can bridge distance, and they can also amplify inequity, erase memory, or turn mourning into a subscription.

The pandemic made this more visible. Livestreamed funerals and video gatherings felt like lifelines to some and like hollow replicas to others (Graham et al., 2022). Social media opened new spaces for public mourning, yet algorithms determined which losses were seen and which vanished. In systems terms, technology acted like a filter: it amplified certain signals of loss while muting others. The question that keeps returning for me is straightforward. Whose grief is legible as content, and whose is dismissed as noise?

Inequity shows up quickly. Well-resourced families may be able to commission digital memorials, maintain perpetual cloud storage, or experiment with griefbots. Families with fewer resources can see archives disappear when subscriptions lapse or devices fail. Kenneth Doka's idea of disenfranchised grief seems to be reappearing at platform scale: losses that do not match the dominant template become invisible or unsupported (Doka, 1989; 2002). Scholars describe this "platformization of death," where memory itself becomes a revenue model shaped by corporate policy rather than communal need (Stokes, 2021; Brubaker & Hayes, 2011; Kneese, 2022).

Bias compounds the problem. Algorithms inherit human prejudice and then scale it. Sentiment analysis often misclassifies grief expressions, especially outside Western idioms, and automated moderation has removed memorial posts as inappropriate or harmful (Micheli, 2016). Broader literatures on AI bias reinforce the point: large models amplify inequities embedded in their data and supply chains (Bender et al., 2021; Noble, 2018; Benjamin, 2019; Crawford, 2021). In healthcare, widely cited work showed an algorithm underestimating the needs of Black patients because it used past spending as a proxy for need (Obermeyer et al., 2019). In facial analysis, darker-skinned women have been misclassified at far higher rates than lighter-skinned men (Buolamwini & Gebru,

2018). These are not glitches. They are structural choices and training histories that decide whose grief gets recognized and whose disappears.

Time introduces a second misalignment. Human grieving metabolizes slowly, through cycles of ritual and silence. Code moves at machine speed and at scale. Virtual reality "reunions" or AI-generated voices may comfort some and prolong mourning for others (Kim, 2020). In systems language, this looks like a pacing problem: human and technological cycles are out of phase, which can destabilize both (Meadows, 2008). It also looks like temporal stacking: past losses stored in archives, present feeds that surface reminders without consent, and future-oriented anxieties about what will happen to our data after death are all loaded into the same moment.

Archetypes from systems practice help me name the dynamics I see most. Many grief technologies look like "Shifting the Burden" patterns: a quick fix that offers temporary relief while bypassing deeper needs for presence, ritual, and community. Livestreams, griefbots, and algorithmic memorials can soothe in the short run and still build dependency or isolation over time. The balancing loops that might restore continuity, such as paced leave, communal rites, or equitable access to memory stewardship, are displaced by reinforcing loops of commodification and speed (Senge, 1990).

Metaphors matter here too. Much of AI still carries mechanistic and Stoic images in its design grammar, which treats emotion as noise and optimization as virtue. These are old industrial metaphors updated in silicon. Ecological and relational metaphors point elsewhere. Systems endure not by suppressing decay but by metabolizing it; grief, in that sense, is not an error but a kind of digestion that points to rupture, continuity, and repair (Thackara, 2006; Capra & Luisi, 2014; Liedtka, Salzman, & Azer, 2021). Mary Midgley's reminder is useful: the myths we live by are working maps. Choosing different maps changes where we think it is possible to go (Midgley, 2003).

Business and policy tools also reveal gaps. The Business Model Canvas does not include continuity of care as a building block (Osterwalder & Pigneur, 2010). Dynamic capabilities emphasize adaptation but rarely consider the grief of what is left behind (Teece, 2010). Policy frameworks like Multiple Streams prize narrow windows of attention; grief typically unfolds across years or decades (Kingdon, 2011). Exclusion does not erase grief. It converts it into hidden liabilities: burnout, mistrust, and backlash.

From a futures perspective, the stakes may be high. We appear to be entering a post-biological phase in which consequential decisions in health, climate, and governance are mediated by learning systems. If grief is excluded from these systems, so are care, continuity, and relational accountability. What remains looks like brittle intelligence:

efficient and predictive, but unwise (Crawford, 2021; Capra & Luisi, 2014). The inverse seems possible. A grief-informed technology practice could treat mourning as signal, memory as a public good, and ritual as a basic civic function.

What this implies for design

- **Design for consent, sovereignty, and stewardship.** Treat memorial data as relational, not merely individual. Use consent that is ongoing and revisitable. Support named stewards and sunset options rather than assuming permanence by default (Lewis et al., 2020; FNIGC, 2019).
- **Embed ritual as a feature, not an afterthought.** By ritual I mean a repeatable, embodied sequence with clear roles and a marked beginning and end. Platforms can support closing gestures, anniversary prompts that are opt-in, and shared pauses before sensitive reveals. Small thresholds signal respect and help align machine time with human time.
- **Adopt grief-aware defaults.** Make memorialization, follow-up support, and pace controls opt-out rather than opt-in. Surface sentinel dates at one, three, and twelve months, and allow users to suppress algorithmic resurfacing on those days. Defaults are policy in practice.
- **Audit for grief erasure.** Expand bias and safety testing to include misclassification of mourning, uneven moderation across cultures, and unequal durability of archives. Test with multilingual, non-Western grief expressions.
- **Match cadence to context.** Rate-limit push notifications around bereavement, provide slow modes for memorial spaces, and delay automated “memories” unless consent is explicit. Align release calendars and feature rollouts with known community cycles rather than only with quarterly targets.
- **Broaden success metrics.** Add measures of continuity and care alongside engagement. Track trust, consent retention, equitable access to archives, and the proportion of grief content removed in error with pathways for redress.
- **Prototype soft forms with hard rules.** Pair experiential features that hold grief with policy changes that grant time, access, and redress. A ritual without rule change becomes theater; a rule change without ritual misses the human transition it creates.

My stance remains careful. Technology will not solve grief, and grief should not be outsourced to machines. Yet design choices can make mourning more legible, more equitable, and less brittle at scale. In foresight terms, grief could be treated as an early warning signal of rupture, a cue to slow the system long enough to reorganize. If the maps we use are broadened and the clocks we keep are tuned to human cadence, our post-biological systems might become less about prediction and more about wisdom: not faster grief, but grief carried well.

When I step back from the detail, I do not see a single cause behind how grief is sidelined. What I notice instead is a weave of forces that together behave like a system.

Quantification privileges what can be counted, markets reward what can be traded, and institutions often centralize discretion where value is easiest to monetize (Scott, 1998; Coase, 1960; Ostrom, 1990). Scarcity stories and competitive imaginaries further shape how attention and resources are distributed (Kahneman & Tversky, 1979; Różycka-Tran, Boski, & Wojciszke, 2015). Cultural metaphors and futures images then give this arrangement its language, so it appears inevitable rather than contingent (Lakoff & Johnson, 2003; Dator, 2009). Gender norms, inequalities, and histories of trauma narrow the repertoire further, often shifting the work of mourning to those with the least institutional power (Hochschild, 1983; Wilkinson & Pickett, 2009; Alexander, 2004). From this angle, unacknowledged grief can resemble a reinforcing loop: displaced at one level until it resurfaces elsewhere, sometimes in ways that appear costly or destabilizing (Meadows, 2008).

The alternative loop looks different. When grief is acknowledged and given space, I see signs of balancing. Recognition rituals, cadence design, and repair mechanisms allow grief to act as feedback rather than hidden pressure (Senge, 1990). The implication for design and foresight is not that grief disappears, but that it may be integrated in ways that steady adaptation.

If this reading is plausible, then several design moves suggest themselves. First, metaphors matter. Frames of care and reciprocity may support policies and products that build trust rather than extraction (Morgan, 1986; Meadows, 2008). Second, measurement deserves attention. Indicators can be mixed rather than flattened, with unseen costs tracked explicitly instead of assumed away (Goodhart, 1975; Strathern, 1997). Third, governance could include the kinds of participatory principles that commons research has long identified: local voice, proportionate response, and transparent conflict resolution (Ostrom, 1990). Fourth, organizational design may benefit from oscillation. Institutions that allow periods of intensity and periods of pause appear better able to absorb shocks (Peng & Nisbett, 1999). Finally, futures work may be widened. Alongside collapse or continuity scenarios, protopian pathways offer an imaginary where loss and repair coexist with incremental improvement (Kelly, 2011; Bielskyte, 2019).

Worldviews and eras have tuned these loops differently. Pre-modern calendars often wove grief into civic ritual, distributing its weight through ceremony and season. Modern managerial logics narrowed mourning into private spaces and short leave policies. Post-modern media logics at times make grief hyper-visible yet shallow, acknowledged in headlines without structural change (van Gennep, 1960; Ariès, 1981; Papacharissi, 2015). Cultural psychology and Indigenous governance traditions remind me that individualist frames encourage private coping, while relational frames circulate obligations across kin,

land, and time (Markus & Kitayama, 1991; Kukutai & Taylor, 2016). These orientations are not fixed. They appear adjustable.

Across the cases I studied, certain patterns recur. Grief behaves like a signal that often travels on a slow clock. When muted, it accumulates as hidden liability until it re-emerges in more disruptive ways. When named and buffered, it steadies coordination. Distribution also matters. Where rights and rules surface externalized costs, grief becomes governable; where they do not, grief pools at the margins and compounds. Metaphors act like infrastructures: once embedded in briefs or dashboards, they steer what choices appear natural and which remain unthinkable. Futures imaginaries shape direction of travel: collapse and utopia narrow agency, while protopian orientations seem to reopen it. Inequality and boundary drawing determine whose losses are counted and whose are erased. And psychology plays its part: biases such as loss aversion, status-quo preference, and sunk-cost thinking can make avoidance appear rational in the short run but counterproductive over time (Arkes & Blumer, 1985; Samuelson & Zeckhauser, 1988).

Taken together, these observations lead me to a cautious claim. Grief is not only private pain but also systemic feedback. It tells us something about the adequacy of our institutions, the metaphors we lean on, and the futures we imagine. If systems are designed to metabolize grief rather than displace it, the likelihood of continuity and cooperation may increase. If not, the costs tend to reappear in bodies, workplaces, communities, and eventually in the performance of the very systems that tried to suppress

4.6 What this synthesis may imply for craft

If the PACER model is to be usable, it should show up in practice in ways that are credible to those who measure by abstract sentiment as well as by efficiency, error rates, and budgets. For me, PACER is not only a conceptual framework but a way of working. Its stages echo a cycle of inquiry and adaptation that can meet the standards of rigor expected in policy, design, and business while opening space for grief to be acknowledged as part of the load systems already carry. If taken seriously, it may allow institutions to become not only more humane but also more resilient and trustworthy.

The practices below illustrate what that might look like in the field. They are not commandments but heuristics, drawn from systems theory, foresight, behavioral economics, organizational research, and my own facilitation work.

Start small, test hard
In complex environments, large interventions fail easily and expensively. This is why I

would begin with small, reversible pilots. They should be judged against outcome metrics skeptics already care about, such as error rates, retention, cycle time, or rework (Edmondson, 2018; Bloom & Van Reenen, 2007). If a grief-aware change does not improve these, I would redesign it or let it go.

Make hidden costs visible
Much of grief's impact does not appear on the main ledger. It appears in absenteeism, presenteeism, staff turnover, complaint volume, or postmortems citing overload. A "second ledger" could capture these numbers explicitly, bringing them into the same conversation as revenue. This reframing makes grief not only an ethical concern but also a managerial one (Case & Deaton, 2020; Meadows, 2008).

Treat metrics as hypotheses, not truth
Any KPI I add should be treated as a provisional guess, paired with qualitative signals, then time-boxed and retired if it drives gaming or misses the point. This approach follows the warnings of Goodhart's and Campbell's laws, which remind us that indicators easily become targets (Goodhart, 1975; Campbell, 1976; Strathern, 1997). Metrics should be aids to learning, not replacements for judgment.

Design for time, not just tasks
Grief does not operate on the same clock as throughput. To account for its long emotional lags, I might add buffers, sentinel-date check-ins, or seasonal pauses. These features allow systems to absorb shocks rather than amplify them, consistent with resilience and system dynamics research (Holling, 1973; Sterman, 2000).

Use low-friction behavioral moves
Sometimes small nudges can make grief easier to acknowledge. Opt-out supports, endings marked as carefully as beginnings, and leader scripts that normalize oscillation do not require large budgets. They align with evidence that behavioral design can support healthier adjustment after loss (Dolan et al., 2010; Bonanno, 2009).

Align rights with responsibilities
Commons governance suggests that systems work best when those who carry the costs also shape the rules (Ostrom, 1990; Coase, 1960). In practice, this might mean lightweight forums where affected groups co-create guardrails. Without this alignment, supports often lack legitimacy.

Tune incentives, then check for perverse effects
If teams reduce incidents or preventable turnover after grief-aware changes, a slice of the

savings could fund repair budgets. But incentives can backfire if gamed, so auditing and quick resets would be crucial to keep them credible (Meadows, 2008).

Change the metaphor at the brief
Before building, I would ask: what is the default image here? Pipeline, factory, or assembly line? If so, could we try a garden, a watershed, or a season instead? Metaphors shift how time, buffers, and exits are designed (Lakoff & Johnson, 2003; Morgan, 1986). This is why metaphor work belongs not only in communications but in delivery.

Balance risk logs with pull-based futures
Risk registers often focus on threats and downside. To balance them, I would convene short protopian sprints that prototype one small, believable improvement and name the grief it is meant to relieve. This orients action toward attainable goods rather than only escape from harm (Kelly, 2011; Dator, 2009; Voros, 2001).

Pre-commit to evaluation
Each intervention could carry a falsifiable prediction, a defined data source, and a review date. If results do not clear the threshold, the intervention stops. This practice reassures skeptics that grief-aware work meets the same accountability standards as other initiatives.

Normalize mixed emotion at work
I would add micro-rituals that take only minutes: closure notes at project end, remembrance moments at anniversaries, and manager training to acknowledge oscillation. These are inexpensive and linked to psychological safety and learning (Edmondson, 2018; Ford, Lam, John, & Mauss, 2018).

Keep equity practical
Grief-aware supports are only as credible as their access. Tracking who uses them by role, pay band, and schedule helps identify gaps. Fixing those gaps is not only fairness; it is risk control, since unequal access often predicts avoidable errors and attrition (Wilkinson & Pickett, 2009).

Retire what fails, scale what travels
If a practice improves retention, error rates, or legitimacy in one unit, I would scale it cautiously to adjacent contexts. If it fails, I would publish the null so others can avoid wasting time. This is a craft posture rather than a creed.

From frame to field

If PACER is to be useful, it has to move beyond theory into practice. The way it takes shape will likely differ across settings, but the orientation is the same: making room for grief as part of the real load systems carry.

In **products and services**, grief-aware design could mean pacing updates or renewals so that users are not confronted abruptly with painful reminders. Interfaces might include options for softer transitions when circumstances change, or allow families to steward accounts after loss. These are small design choices, but they may shift experiences of continuity in ways metrics rarely capture.

In **workplaces**, grief-aware practices might focus less on grand policies and more on micro-adjustments that shape culture. For instance, closing rituals at the end of projects, peer-led reflection sessions, or quiet spaces for pause could become as ordinary as safety drills. These cues would suggest that acknowledgment is part of organizational hygiene rather than an exception.

In **policy**, grief could be integrated into design clocks that fit the realities of loss. Short-term relief may be necessary, but longer cycles of support are often what sustain recovery. This could mean aligning aid programs with seasonal or generational rhythms rather than treating recovery as a single event. Policy becomes less about quick closure and more about scaffolding continuity over time.

In **diplomacy**, grief-aware approaches may create new forms of legitimacy. When negotiations explicitly account for losses; whether of land, culture, or security, they open pathways for trust that technical agreements alone cannot secure. This might mean embedding remembrance into treaties or pairing compensation with cultural recognition. What looks symbolic at first can operate as a stabilizing force in practice.

Across these domains, the throughline is modest but important: grief-aware moves are not extras. They are design choices that can make institutions steadier, policies more credible, and communities more capable of carrying loss without losing function.

Why PACER follows, and why it could travel

The framework stays modest on purpose. It treats grief as a design-relevant signal, not a totalizing theory. Its scaffolds are deliberately small and testable: recognition protocols,

cadence design, ritual micro-practices, memory stewardship, and metric hygiene. It also invites measures skeptics already respect, such as error rates, retention, consent durability, equitable access, and legitimacy indicators (Goodhart, 1975; Campbell, 1976; Strathern, 1997). At the same time, it invites rival explanations and asks whether grief-aware moves still improve outcomes when other variables are controlled.

If there is a craft here, it may be the craft of choosing metaphors with care, giving time its proper size, and embedding supports that let communities carry loss without losing function. PACER suggests that institutions do not need to choose between rigor and compassion; the two may reinforce each other when designed with attention to grief.

CHAPTER FIVE

GRIEF INFORMED FUTURES + DESIGN PROCESS MODEL + FRAMEWORKS

5.0 Introduction to PACER: anticipation and continuity

The case for a framework is practical rather than doctrinal. I am not asking anyone to trade in their methods. I am proposing a small add-on that could be evaluated with ordinary metrics: error rates, retention, near-miss incidents, legitimacy indicators, equitable access to supports, and the cost of turnover. If grief-aware changes do not move these outcomes when rival explanations are considered, they should be revised or retired. If they do move them, then the case is empirical and does not depend on agreement about philosophy or feeling. That is why the PACER tools are written to be modest and testable rather than sweeping. They complement existing practice and can be run as reversible pilots before any broad adoption.

This introduction reflects the cross-disciplinary foundations already established. Systems thinking suggests that feedback and delay shape behavior, which is reason enough to treat grief as a signal with a slow clock. Foresight reminds me that narratives and horizons pre-structure what people find plausible, so naming grief inside scenarios could reduce adoption risk. The result is straightforward: a process that helps teams notice grief when it matters, trace causes and impacts, and prototype proportionate responses that improve continuity. The framework's steps and lineage are detailed in the next sections and remain consistent with the scholarly scaffolding laid out in Chapters 3 and 4.

In short, I use anticipation to justify one practical move. If grief changes the internal model a system uses to decide, then it should change design. PACER offers a way to make that change explicit, small, and measurable, so skeptics and advocates can judge it on results rather than rhetoric.

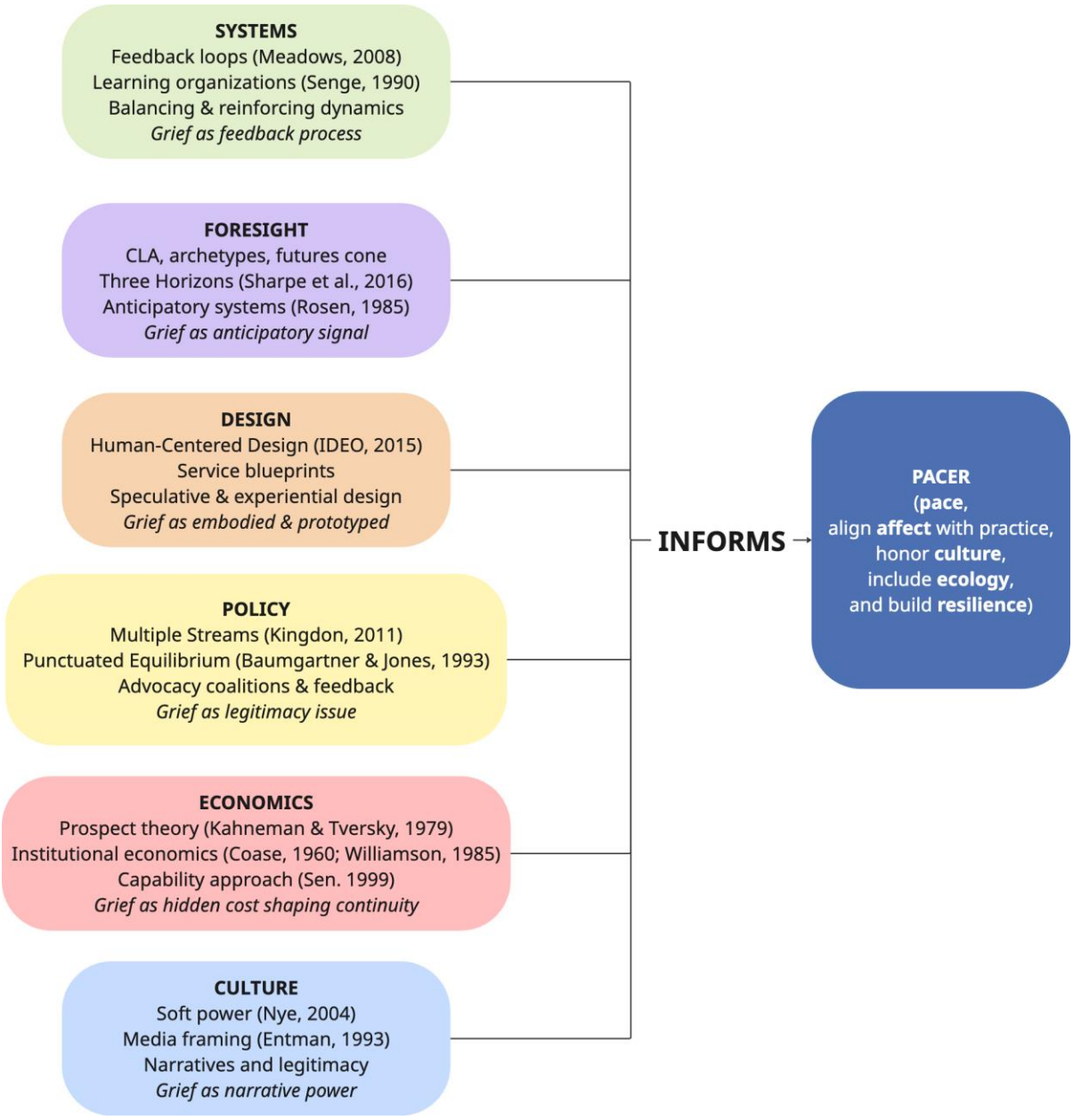


Figure 5.1 ***Foundations that inform PACER.*** *Insights from systems, foresight, design, policy, economics, and culture frame grief as feedback, signal, embodiment, legitimacy, hidden cost, and narrative power. Together they inform PACER: pace work, align affect with practice, honor culture, include ecology, and build resilience*

What PACER is

PACER is a three step, iterative process for **sensing**, **framing**, and **mapping trajectory** of biocultural signals so that organizations and communities can set a workable pace, align

affect with practice, honor culture, include ecology, and build resilience. This is built from the established signals tracing methods in the strategic foresight discipline.

It can be used to map multiple cultural factors and emotions beyond grief but I am focusing on grief in this research for the purpose of depth and focus, while doing light tests on other emotions to ensure the models work for them.

I now use PACER as the name for the process model. The acronym also forms a word, which maps directly to a key component of the process mode: pacing. If bodies, cultures, and ecologies move on different clocks, my rationale was to design to match pace rather than force speed. PACER treats signals from biology, emotion, culture, practice, and wider-than-human relations as navigational cues. When those cues shift, it provides signals that could point to the need to adjust cadence, recognition, and rules so that people can carry purpose through change without losing legitimacy or function. I keep a minimal anticipatory stance in reserve. Present choices could be guided by near-future models in the modest, engineering sense of anticipation, but the posture stays qualitative first, then testable with a few simple outcome checks that are already well-established (Rosen, 2012; Sterman, 2000; Meadows, 2008; Edmondson, 2018).

Design contributes the craft piece: metaphors, cadence, and defaults quietly steer behavior at scale (Lakoff & Johnson, 1980/2003). PACER weaves these insights into a small, teachable loop.

Why this structure

I designed the flow to match how people learn at work: **chunked steps, clear prompts, worked examples, progressive disclosure** to reduce cognitive load and invite use under pressure (Sweller, 1988; Mayer, 2009). Each move has a **minimum viable artefact** for qualitative use and an **advanced option** for analytical teams. Defaults lean toward opt-out so participation is easy and early wins are visible (Dolan et al., 2010).

The sequence follows an Observe–Orient–Decide–Act (OODA) rhythm, with explicit safeguards against bias and gaming (Argyris & Schön, 1996; Dolan et al., 2010; Goodhart, 1975; Campbell, 1976).

Signals, explained

A **signal** is any **observable trace of change** that could matter for design, policy, or governance. Good signals are **recognizable** to more than one observer, **repeatable** across

time or venues, and **directional** in that they appear to be heading somewhere rather than drifting.

- **Linguistic signals.** Recurring phrases, metaphors, songs, testimonies, satire.
- **Behavioral signals.** Vigils, walkouts, collective pauses, help-seeking patterns, quiet quitting motifs.
- **Material signals.** Memorial objects, improvised workarounds, quiet rooms, new routes through a service.
- **Biological signals.** Ethically aggregated markers of load and rhythm, for example self-reported sleep disruption after a loss or circadian misfit in shift logs. (No surveillance of individuals is implied).
- **Wider-than-human signals.** Ecological grief expressions, seasonal absences in community species notes, land and water rituals that indicate strain in local systems (Kimmerer, 2013; Whyte, 2018).

Most important, **multiple emotions co-occur**. Grief rarely travels alone; anger, hope, and solidarity often braid with it. The **mix** predicts whether energy burns out or consolidates into durable practice (Bonanno, 2009; Goodwin, Jasper, & Polletta, 2001). PACER reads the mix first, then chooses recognition, accountability, or consolidation moves accordingly.

How plurality is built in

From the outset I have treated plurality as a feature, not a complication. PACER draws from participatory and decolonial futures practices that foreground community narratives, language justice, and stewardship ethics, including the work of Pupul Bisht's Decolonial Futures work and Prateeksha Singh's focus on cultural translation, as well as community-led approaches documented in the Sôhkêpayin report (Bisht, 2020; Singh, 2021; Baerg et al., 2024). The scaffolds stay shared so findings are comparable, but the content remains local so the work is legitimate across Indigenous, diasporic, and wider-than-human perspectives (Inayatullah, 1998; Dator, 2009; Kukutai & Taylor, 2016).

To make this practical, I frame plurality through a set of principles that align with the stages of PACER:

1. Local legitimacy
Insights gain traction when they are rooted in lived experience and recognized by those most affected. Community validation ensures that the Discover stage is not extractive but generative, producing signals that matter locally while still comparable across sites (Chambers, 1994).

2. Narrative diversity
Plural stories, metaphors, and languages expand what is thinkable and counter the narrowing effects of dominant discourses (Lakoff & Johnson, 1980/2003). In the Anticipate and Define stages, narrative plurality keeps scenarios open and helps avoid premature closure around a single cultural lens.

3. Poly-temporality
Different cultures live and mark time differently: seasonal, ancestral, linear, or cyclical. Poly-temporal practices expand the Cadence stage, aligning adaptation rhythms with ecological, cultural, and intergenerational clocks (Adam, 2004; Yehuda et al., 2016).

4. Relational accountability
Indigenous scholarship reminds me that data and decisions should be governed relationally, accountable not only to people but to land, ancestors, and descendants (Wilson, 2008; Kukutai & Taylor, 2016). In the Evaluate stage, this shifts accountability from compliance to stewardship, asking not only "did this work" but "for whom and at what cost."

5. Equity by design
Plurality without equity risks tokenism. Behavioral economics shows that defaults and framing strongly shape participation (Dolan et al., 2010). Embedding equity checks at each stage such as whose grief is seen, whose voice is present, who has authority to decide, reduces blind spots and builds trust.

6. Commons orientation
Plurality also requires governance forms that keep benefits collective. Ostrom's design principles for commons management remind me that shared resources thrive when rights and rules are co-created (Ostrom, 1990). This principle animates the Repair stage, where benefits and burdens are distributed fairly rather than privatized.

Taken together, these principles ensure that PACER is not simply a technical model but a pluralistic practice. Local legitimacy strengthens Discover. Narrative diversity widens Anticipate and Define. Poly-temporality re-shapes Cadence. Relational accountability reframes Evaluate. Equity and commons orientation make Repair credible. Plurality is therefore not an add-on but the condition of the framework's integrity.

5.1 The PACER process, with rationale and examples

The model involves signal gathering and sensemaking in 3 steps, with 3 further steps of coding findings to understand pacing, rhythm, and root causes. The first step involves understanding the dynamics impacting sentiment in an ecosystem.

Step 1 | Sensing

Goal. Observe and build a small, trustworthy archive of human, biological, and wider-than-human signals.
Questions to ask. What are people saying, doing, making, avoiding. Where is rhythm out of sync. What are land and water stewards noticing.
Minimal artefact. A one-page **signal inventory** with source, venue, time window, and two quotes or images per item.
Advanced options. Add lightweight network mapping of how a phrase or ritual spreads.
Why this order. I start with observation so I do not explain before I have listened.

Step 2 | Framing (classify with Cultural Signals Framing explained in 5.10)

Goal. Keep texture while making patterns comparable.
Questions to ask. Which emotions are present together. How deep is the grievance. Who is recognized. Which metaphors dominate.
Minimal artefact. A **frame table** coded on the seven CSF dimensions.
Advanced options. A/B tests of candidate reframes.

Step 3 | Trajectory (Impact Ladder)

Goal. Learn where signals are and where they seem to be heading.
Questions to ask. Which rung best describes current position. What is the slope over the last quarter. Did the venue shift.
Minimal artefact. A one-slide **ladder profile** with stalls and surges marked.
Advanced options. Longitudinal comparison quarter on quarter; link to Overton Window shifts for policy proximity.

Coding

This step involves further analysis of the data to account for implications and root causes of findings.

Step 1 | Account for grief when present

Plain-language goal. Translate grief into specific design and governance implications.
Questions to ask. What recognition is required. Where are cadence or buffers missing. Whose legitimacy is at risk if grief is ignored.
Minimal artefact. A **grief-accounting report t**hat lists recognition, cadence, and legitimacy implications.
Advanced options. Sentinel-date calendars; bereavement allowances; restorative forums.

Step 2 | Trace causes and distributions

Plain-language goal. Avoid misdiagnosis; see who bears costs without voice.
Questions to ask. What policies, practices, power relations, histories, and ecological factors produce this pattern.
Minimal artefact. A short **cause sketch** per major cluster using a 5-Whys and a timeline.
Advanced options. Simple difference-in-difference if a change rolls out in phases; rival explanation tables (Coase, 1960; Ostrom, 1990; Shadish, Cook, & Campbell, 2002).

Step 3 | Surface rhythms and attachments

Plain-language goal. Align cadence with load and clarify what must endure.
Questions to ask. Where are peaks, endings, and pauses. What must we keep. What can we let go. What do we want to become.
Minimal artefact. A **rhythm map** and a **continuity charter** from a short keep–let go–become workshop.
Advanced options. Program-level oscillation design that alternates intensity and reflection; protected safe-to-fail probes (Stroebe & Schut, 1999; Holling, 1973).

Where the subtools sit. CSF powers Steps 2 and 6 and enriches Steps 1 and 3 by preserving texture while enabling comparison. The Impact Ladder is the read-out for Step 3 and the early-warning instrument for ongoing monitoring.

5.2 How to run PACER

Ninety-minute tabletop. Bring six people who see different parts of the system. Do Step 1 on sticky notes for 20 minutes. Do Step 2 with a simplified CSF card for 20 minutes. Place the top five signals on the Ladder for 15 minutes. Spend 15 minutes naming one recognition move and one structural move. Assign an owner, a measure, and a date. Reserve the last 20 minutes for risks, equity cuts, and consent.
Two-week sprint. Add ten short interviews, a small artefact set, an inter-rater reliability pass on coding, a cadence audit, and a keep–let go–become workshop.
Quarter-length program. Add network analysis of signal spread, longitudinal slope tracking, venue-shift monitoring, and small nudge experiments on defaults and timing. Use case-comparison logic to see which mechanisms travel across settings (Yin, 2014; Kingdon, 2011).

Why this works for newcomers. The artefacts are short and tangible. You can see a grief map, a frame table, a ladder profile, a rhythm map, and a two-move plan on one wall. The method does not require conversion to a philosophy. It asks for small tests and clear review dates.

Measurement, verification, and ethics

What to measure. Keep it small. Error rates, near-miss events, time to recovery, retention, consent durability, and participation in recognition practices. Always add **equity cuts** by role, pay band, schedule, and contract type to surface hidden burdens (Bloom & Van Reenen, 2007; Edmondson, 2018; Ostrom, 1990).
How to attribute cautiously. Where possible, use staggered adoption or simple difference-in-difference. Always list rival explanations. Treat results as provisional, especially in complex settings (Shadish, Cook, & Campbell, 2002).
Data governance. Informed consent, anonymization, opt-in for sensitive topics, shorter sessions for grief-heavy work, community stewardship over stories. Avoid clinical diagnosis and real-time surveillance. PACER uses ethically aggregated indicators only.

How PACER travels across contexts

- **Healthcare.** Sentinel-date check-ins after patient deaths; paced return protocols; peer support as I2 practice; policy updates at I3; watch for ritual stalls.

- **Technology.** Closure rituals at end of sunsetting products; grief impact notes for automation that displaces roles; narrative reframes from war to care metaphors; track time to recovery after incidents.
- **Public sector.** Memorial diplomacy after collective loss; loss-and-damage mechanisms tied to anticipatory grief; Overton mapping with Ladder slope to time reforms.
- **Community and culture.** Co-created rituals that acknowledge ecological grief; stewardship calendars; language-justice interviews; Indigenous data sovereignty principles.

These are illustrations, not prescriptions. The point is to keep scaffolds common and content local.

5.3 Biases and Limitations

When I chose the name PACER, I was privileging time. The model draws attention to cadence, buffers, oscillation, and recovery windows. That emphasis draws from resilience ecology and systems dynamics, where pacing and slack often matter as much as scale in determining whether systems adapt or collapse (Holling, 1973; Meadows, 2008). The choice was also pragmatic. It signals to executives, policymakers, and engineers that rhythm is not a soft concern but a design variable worth taking seriously. In settings where speed is celebrated and slack is treated as waste, the reminder that pacing itself can be protective may be quietly disruptive.

Other names I considered would have carried different emphases. SEEDS would have highlighted growth, generativity, and propagation. BEACON would have stressed visibility, orientation, and signaling. Each name invited a slightly different imaginary. SEEDS framed grief as fertile ground for renewal, BEACON as a light for direction in disorientation. PACER, in contrast, foregrounds rhythm and recovery, which felt closer to the evidence and more practical for the audiences I wanted to reach.

The choice of PACER also reveals what the framework leaves out. It is not a clinical tool, it does not rely on individual surveillance, and it avoids one-number cross-cultural rankings. These omissions are deliberate. Instead, PACER privileges signals that are ethically legible, socially comparable, and adaptable through small, testable moves. The framework is less a diagnostic instrument than a scaffold for organizations and communities to notice, pace, and repair together.

In practice, pitfalls are easy to fall into. A media spike may be mistaken for durable practice. Sentiment may be reduced to a single dial, obscuring differences in recognition. Online channels with high volumes may drown out quieter venues, languages, or oral traditions. Some institutions stop at proximate causes and forget equity cuts by role, gender, or schedule. Others offer wellness tips for wounds that are structural rather than personal. Leaders sometimes dismiss slack as inefficiency and strip away the very buffers that make systems resilient. And well-intentioned teams may scatter effort across many small initiatives without review dates, or they may chase metrics that eventually warp behavior, despite decades of warnings from Goodhart, Campbell, and Strathern (Goodhart, 1975; Campbell, 1976; Strathern, 1997).

Limitations and how I address them

Every framework has blind spots, and PACER is no exception. My task is to name them openly and design mitigations where I can.

Performative recognition without structural change. Recognition rituals risk becoming empty if they are not paired with material action. I try to couple every symbolic move with a structural one, for example pairing acknowledgment with adjustments to schedules, resources, or decision rights (Coulthard, 2014).

Measurement gaming. Any metric can be gamed once it becomes a target. To guard against this, I pre-commit measures, review dates, and exit conditions. I retire metrics the moment they distort behavior, consistent with audit literature on Goodhart's and Campbell's laws (Goodhart, 1975; Campbell, 1976; Strathern, 1997).

Over-generalization across cultures. I resist the temptation to rank or universalize. Scaffolds stay constant for comparability, but content remains local. Typologies are published instead of league tables. Independent coding and member-checking provide checks on interpretation (Lincoln & Guba, 1985).

Attribution in noisy environments. Complex systems make causal claims difficult. Grief events overlap with other drivers, so I look for rival explanations, staggered adoption, or quasi-experimental designs such as difference-in-difference. Even then, I stay cautious about declaring causality (Shadish, Cook, & Campbell, 2002).

Equity blind spots. Systems often default to averages that erase difference. To counter this, I monitor who uses supports by role, pay band, or schedule. If access is unequal, I adapt delivery until fairness improves. Research shows that inequity reliably predicts downstream errors and attrition (Wilkinson & Pickett, 2009; Bloom & Van Reenen, 2007).

PACER is not a universal law but a way of working. Its strength may lie less in definitive answers than in disciplined habits: starting small, listening before explaining, pairing recognition with reform, and holding my own tools lightly. If it succeeds, it will be because it helps institutions treat grief not as waste but as part of the load they already carry, and to design with that reality in mind.

5.4 Exploring PACER: Cultural Signal Framing (CSF) for identifying nuance

Cultural Signal Framing began as a way to avoid flattening grief into like counts and sentiment polarity. It has evolved into a **compact interpretive engine** that preserves texture while producing actionable evidence.

Layered emotions, not single labels. I code for grief, anger, hope, and solidarity as distinct yet co-present affects. This matters because the mix predicts behavior. Anger without solidarity often burns out; grief with hope sustains effort; solidarity moderates anger into durable organization. Psychology supports these distinctions, and they repeatedly show up in casework.

Depth of grievance. I classify whether a signal implicates personal, communal, historical, or ecological registers. Personal loss may require local supports. Historical or ecological grief almost always implies policy and justice questions. This "depth" variable keeps leaders from prescribing wellness workshops to problems that require reparative action.

Reach and resonance over raw virality. I track repetition, variability, and echo across mediums, not only volume. A small but persistent motif in memorial art can foreshadow a much larger shift, whereas a viral spike may dissipate with no institutional footprint. Resonance is about **staying power**, not just scale.

Equity of recognition. I ask whose grief is legitimized and whose remains disqualified. Butler's observation that grievability is uneven becomes operational here. Disqualified grief is a risk flag for both legitimacy and stability.

Worldview and metaphor. I tag dominant frames and candidate reframes. This connects coding to practice: reframing from "fix and throughput" to "cycle and kinship" gives designers and communicators concrete language to test.

Temporal orientation. I mark whether a signal faces backward, names present burdens, or anticipates loss. Anticipatory grief is especially important for foresight because it can narrow imagination unless held with care and ritual.

Multispecies register. I explicitly code for grief relating to land, waters, and nonhuman kin. This avoids treating ecological expressions as mere aesthetics and links them to governance and law.

The coded set becomes a living archive. I visualize clusters by emotion mix, depth, and metaphor family, then overlay timing and reach. Patterns emerge that a sentiment dashboard cannot show: for example, a shift from personal sorrow to communal solidarity around a single phrase, or a migration of metaphors in one sector that later appears in another.

Why these dimensions

I use these because each has a clear **theory-to-practice link**: emotion mix to support type, depth to level of intervention, resonance to timing, equity to legitimacy, temporal focus to sequencing, metaphor to cadence, wider-than-human to governance. They are small enough for a team to learn in an afternoon and rich enough for an auditor to follow.

Quick bridge to MINDSPACE

MINDSPACE is a practical checklist of behavioral levers that often work with modest cost: **Messenger, Incentives, Norms, Defaults, Salience, Priming, Affect, Commitments, Ego** (Dolan et al., 2010). CSF helps me choose **which** lever to use, **where**, and **for whom**. Below I expand each lever with the kinds of grief-related signals I might see and a proportional response.

CSF tells me **where** and **for whom** to apply MINDSPACE levers (Dolan et al., 2010):

- If **Messenger** credibility sits with charge nurses, route scripts through them.
- If **Defaults** matter at sentinel dates, make check-ins **opt-out**.
- If **Norms** are uneven, publish a **closure protocol** as a shared standard.
- If **Salience** favors seasons, add a **maintenance** tile beside throughput.
- If **Affect** is grief+hope, legitimize **oscillation** and design **paced return**.
- If **Commitments** exist as L2 practices, make them **light public pledges**.
- If **Ego** and dignity are central, design **competence-honoring** recognition.

- If **Incentives** are due, pair efficiency gains with **time credits** or **repair funds** governed with those affected.
- If **Priming** will help, use the **same metaphors** people are already using.

The codebook's job is modest. It helps me keep people's words, images, and rhythms intact, then turns that texture into **small, testable moves** that would likely fit the local mix. That is the spirit of PACER: listen carefully, match pace wisely, and design so communities can carry loss without losing function.

- **Messenger.** People are more likely to act when the message comes from a trusted figure.
  If CSF shows caregivers and elders as credible voices, I would route key updates through them rather than through distant executives. *Worked move:* a two-minute huddle led by a respected charge nurse on sentinel dates.
- **Incentives.** Costs and benefits shape behavior, often non-linearly.
  If depth codes implicate structural burden, I would avoid token rewards. *Worked move:* pair efficiency gains with time credits or repair funds governed with affected staff so the incentive matches the loss.
- **Norms.** We copy what we believe peers are doing.
  If equity of recognition is uneven, I would make acknowledgment a visible shared standard. *Worked move:* publish a simple closure protocol that all teams follow after critical incidents.
- **Defaults.** People often accept the path of least resistance.
  If temporal codes show grief around anniversaries, I would make check-ins opt-out rather than opt-in. *Worked move:* automatic scheduling of a brief follow-up 30 and 90 days after a major loss.
- **Salience.** What stands out gets attention.
  If metaphor family favors cycles and care, I would show maintenance and rest alongside throughput and targets. *Worked move:* a dashboard tile for buffer health, not only flow.
- **Priming.** Cues shape later responses.
  If the archive is rich in repair and kinship language, I would use the same phrases in scripts and signage. *Worked move:* swap "war room" for "repair room" in incident response.
- **Affect.** Feelings influence choices more than we admit.
  If the emotion profile is high on grief and hope, I would legitimize oscillation and design for pacing. *Worked move:*a template for paced return that normalizes good days and bad days.

- **Commitments.** People keep public promises.
  If local practice is forming at L2, I would turn it into a light pledge. *Worked move:* a monthly maintenance day or a standing circle with a named facilitator.
- **Ego.** We act in ways that maintain identity and dignity.
  If dignity appears central in the archive, I would design recognition that honors competence rather than pity. *Worked move:* peer-nominated skill awards tied to repair and mentorship.

The point is not to use every lever. The point is to let CSF indicate **which** lever would likely fit the local emotion mix and metaphor family, then to keep the moves small and testable.

Mechanistic and Biological Metaphor Audit

Organizational / Corporate / Societal Lens

One of the strongest through-lines across my research was how much language shaped practice. Corporate memos described grief as "downtime" or "lost productivity." Government reports spoke of "fixing" communities. Lakoff & Johnson (1980) show metaphors structure cognition, and Meadows (2008) reminds us systems adapt differently depending on their framing. As discussed earlier in Chapter 3 and 4, these mechanistic metaphors can prime leaders to treat grief as a problem to solve. If grief were a wave, this might be seen as taking the approach of a seawall, as opposed to surfing it.

How we arrived here

- **Metaphor scans** I conducted on institutional communications (healthcare, HR, NGOs) showed >80% of language was mechanistic, even in contexts where ecological cycles were the more appropriate frame.
- **Indigenous worldviews** provided a counterpoint: Māori tangihanga, Andean ayni, or Ubuntu in Southern Africa all emphasize cycles, reciprocity, and kinship.
- **Comparative design analysis** revealed that documents written in biological metaphors (e.g., "growth cycles" instead of "throughput") generated higher employee trust and policy uptake.

How to use

Within cultural signal framing, steps can be taken including the following to understand the prevalence of metaphors and how they frame thinking. This is based on the CLA tool (Inayatullah).

- **Policy & Comms Scan.** Run text audits across leadership speeches, HR manuals, or policy roadmaps. Label terms as mechanistic (*throughput, repair, efficiency*) or biological (*cycle, renewal, reciprocity*). Compute the ratio. This quantifies an institution's worldview.
- **A/B Rewrite & Test.** Take a high-leverage artifact (e.g., HR policy, onboarding, product TOS) and rewrite it in biological metaphors. For example, replace "employee downtime" with "seasonal renewal." A/B test outcomes in surveys, adoption rates, or trust scores. This shows whether metaphor shifts move behavior.
- **Design for Dormancy & Regeneration.** Translate metaphors into infrastructure: sabbaticals, seasonal sprints, closure rituals for projects.

A short worked example

Suppose a hospital unit keeps repeating "we never stop," and a memorial pin appears at lockers on the same day each month. CSF might score **grief 2, hope 1, solidarity 2**, mark **communal depth**, **strong resonance**, **present focus**, **mechanistic metaphors**, and no wider-than-human register. I would place the signal at **L2 Local practice** on the Impact Ladder and aim gently for **L3 Institutional change** within a quarter.

- **Messenger:** charge nurses host two-minute huddles on the sentinel day.
- **Defaults:** opt-out check-ins at 30 and 90 days after a patient death.
- **Norms:** a one-page closure playbook as standard.
- **Affect:** a quiet room and a short script that normalizes oscillation.
- **Measure:** time to recovery and near-miss events, reviewed after six weeks. If the slope flattens or backlash appears, I would pause and adjust.

Bias safeguards and ethics

I try to limit bias by sampling across roles, languages, and schedules; double-coding a subset; writing brief coder memos; and member-checking summaries where appropriate. Consent is explicit. Sensitive disclosures are opt-in. Anonymity is the default. Biological signals are **aggregated** and used to guide cadence, not to monitor individuals (Braun & Clarke, 2006; Krippendorff, 2013; Lincoln & Guba, 1985).

What CSF leaves out and why

CSF is not diagnosis and not surveillance. It will miss tacit, embodied knowledge that never appears in text or artefacts unless we invite it in. Joy and humor could be

undercounted unless we code for them on purpose. I accept these limits in exchange for readability, teachability, and ethical comparability.

A quick checklist to lift into practice

- Define the unit.
- Sample across roles, languages, schedules, and venues.
- Transcribe, anonymize, and open-code.
- Apply the seven CSF dimensions and the 0–3 emotion scales.
- Double-code a subset and resolve.
- Write reflexive memos and member-check.
- Build the table and simple indices.
- Map levers with **MINDSPACE**.
- Place signals on the **Impact Ladder** to read trajectory and set pace.
- Pair one recognition move with one structural move, pick one metric and a review date, and retire any metric that starts to distort behavior.

In short, CSF began as a way to resist flattening. It now functions as a small bridge from **story to strategy**. It keeps the words and images people actually use, then connects them to levers that leaders actually control. That is the spirit of PACER. Listen carefully, match pace wisely, and make small, testable moves that help communities carry loss without losing function.

5.5 The Impact Ladder: reading trajectory, not just volume

When I first sketched the **Impact Ladder**, I imagined a simple diagram to read how grief travels from expression to consequence. With use, I began to see more. The Ladder may work as an **early-warning instrument**, hinting when signals could spill into wider systems, and as a **learning scaffold**, giving me a disciplined way to reflect on why some signals stall, accelerate, or transform. I hold this modestly. The Ladder is not a predictor. It is a compact way to notice **trajectory** and to tune **pace**.

Why a ladder, and where the idea comes from

I chose a ladder because it is familiar and directional. Ladders invite ascent, yet they also allow for slips, stalls on a rung, or skipped steps. That tension between progression and fragility feels close to how grief behaves in systems. It climbs when conditions allow, idles when blocked, and sometimes jumps.

The metaphor sits in conversation with several lineages; I adapt rather than replicate them:

- **Diffusion of innovations.** Rogers mapped stages from innovators to laggards. I borrow the stage logic, but I apply it to **translation into institutional and cultural form**, not only adoption. A message can be adopted as talk without becoming **practice, rule, or right**; the Ladder helps me see whether that translation is underway (Rogers, 1962/2003).
- **Policy stages and streams.** Kingdon's windows open when problems, policies, and politics align. I use a parallel rhythm and treat grief as one of the drivers that may push an issue into the window, especially when it becomes publicly legible and morally urgent. The Ladder then asks whether the **cultural groundwork** is sufficient for enactment to endure (Kingdon, 2011; Sabatier, 1999).
- **Three Horizons.** Sharpe and colleagues chart transitions from H1 dominance to H3 emergence. I use the Ladder as a **finer-grained read** inside and across horizons to see how emotional and cultural signals migrate from early talk to repeatable practice and rule (Sharpe et al., 2016).
- **Narrative and framing.** Causal Layered Analysis shows how shifts in metaphors and myths reset what futures feel possible (Inayatullah, 1998). Frame theory adds that effective frames **diagnose**, **prognose**, and **motivate** by telling people what the problem is, what should be done, and why it matters (Snow & Benford, 1988, 2000). Social imaginaries explain why some orders feel natural and others unthinkable (Taylor, 2004). I therefore place **narrative change at I5**. Without a shift in default metaphors and imaginaries, structural reforms at I4 tend to erode or be reversed because the culture still "reasons" with the old meanings (Lakoff & Johnson, 1980/2003; Jones & McBeth, 2010).
- **Systems archetypes.** Meadows's archetypes explain recurrent failure modes. I use the Ladder to **localize** which archetype seems active at a given rung and to choose leverage that fits the pattern, for example moving from symptomatic relief toward root-cause work when "shifting the burden" is present (Meadows, 2008).

In short, the Ladder is a small synthesis. It fills a gap by making **grief trajectories** legible in ways these models, taken separately, may not.

CSF tells me **what** a signal is and how it is framed. The **Impact Ladder** tells me **where** it is in the system and **where it might be heading**.

- **L0 Awareness.** The signal enters discourse.
- **L1 Micro-behavior.** Individuals act in visible but short-lived ways, for example vigils or donations.
- **L2 Local practice.** Communities routinize responses, for example peer support or mutual aid.
- **L3 Institutional change.** Policies or procedures shift inside organizations, for example memorial protocols or paced return.
- **L4 Structural reform.** Systems change, for example reparative funding or new governance rights.
- **L5 Narrative shift.** Dominant metaphors and social imaginaries move, for example land as kin rather than resource.
- **L6 Ecological outcomes.** Tangible renewal appears, for example restored ecosystems or multi-generational continuity.

Figure 5.2 Impact Ladder

Two patterns I watch for

I keep encountering two recurrent stalls:

1. **Ritual without uptake.** Strong activity at **L1–L2** but no movement to **L3–L4**. Communities create practices, yet institutions never legitimize them. Cynicism and exhaustion follow.
2. **Policy without legitimacy.** Reforms appear at **L3–L4** before awareness and local practice at **L0–L2** are mature. Backlash follows because change feels imposed rather than rooted.

Both appear in policy research. Reforms that lack cultural legitimacy rarely endure; legitimacy crises emerge when system logics outrun lifeworld meaning (Pierson, 1993; Habermas, 1984). The remedies would differ. Ritual stalls might need **bridges into institutions**. Policy outrunning meaning might need **deeper narrative and attachment work**.

Nonlinear jumps and why I stay cautious

Signals do not always climb in sequence. A court ruling, an investigative series, or a potent image could propel a jump from **L1 to L4** within days. Punctuated-equilibrium and threshold-contagion models describe these bursts after long dormancy (Baumgartner & Jones, 1993; Granovetter, 1978; Centola, 2018). After a jump, I try to ask what conditions are needed to **consolidate** at the new rung so the system does not slide back.

Why L5 is narrative shift, and why it should sit above structural reform

L5 may be the most debated rung, so I name my rationale clearly.

1. **Frames make reforms legible.** Frames tell people what counts as harm, who the responsible actors are, and what a good remedy looks like. Without a new frame, an I4 reform can look like an overreach or a special case rather than a rightful repair (Snow & Benford, 1988, 2000; Stone, 1989).
2. **Imaginaries anchor defaults.** Social imaginaries stabilize everyday expectations. When the dominant imaginary changes, what once seemed "radical" becomes "common sense," which lowers enforcement costs and reduces rollback risk (Taylor, 2004; Jones & McBeth, 2010).
3. **Metaphors govern practice.** Metaphors are not decoration. If the governing image remains "pipeline," people will optimize for throughput even after a new rule is passed. If the governing image becomes "season" or "kinship," people may legitimate buffers, pruning, and rest, which makes the rule live in practice (Lakoff & Johnson, 1980/2003).
4. **Durability needs story.** Policies that travel with a compelling public narrative are more likely to be defended in future cycles. In ladder terms, **L5 locks in L4** by

changing what feels natural and by recruiting everyday guardians for the new order (Kingdon, 2011; Inayatullah, 1998).

I chose CSF for **content and framing** and the Ladder for **trajectory and institutionalization**. Paired, they offer **meaning** and **movement**. They are simple enough for a workshop and structured enough for longitudinal tracking.

In **Cultural Signal Framing**, I watch for sustained shifts in metaphor family, a rise in shared language that diagnoses, prognoses, and motivates, venue migration into curricula and training, and a decline in counter-frames. When those patterns persist across months, I tentatively mark L5 as present.

Ethical note. I treat narrative work as **co-creation**, not manipulation. I try to privilege plurality and invite communities to author the frames that carry their losses and hopes.

Linking stalls to archetypes

When a signal oscillates between **L0** and **L1** with no progression, I often find familiar archetypes at work. **Fixes that fail** and **shifting the burden** show up frequently: symbolic acknowledgement substitutes for structural change, and the underlying load increases. Naming the archetype can suggest leverage, for example shifting effort from soothing symptoms toward root-cause repair (Meadows, 2008).

Dimension	What to Look For (Signals)	How to Interpret	Tools & Methods
Emotion Profiles	Expressions of exhaustion, anger at workload, grief for lost colleagues, hope for reform. Listen for tone in interviews, hashtags	Emotions guide system dynamics: grief slows and deepens reflection, anger sparks mobilization, hope sustains long-term effort, solidarity binds groups (Barrett,	*Basic*: Note emotions in quotes, posts, placards. *Advanced*: Sentiment analysis with nuance coding, discourse analysis of tone and affect.

	(#QuietQuitting), or protest chants.	2017; Goodwin et al., 2001).	
Depth of Grievance	Personal stress, team-level attrition, collective burnout protests, historical underfunding of health staff.	Depth signals whether interventions should be individual (wellness), organizational (policy reform), or structural (funding, labor law).	*Basic*: Map whether signal is "personal, communal, systemic." *Advanced*: Root cause mapping, justice frameworks, cross-level analysis.
Reach & Resonance	Number of people repeating stories (exit interviews, viral posts), scale of participation (local vigils vs. global hashtags).	High resonance predicts spillover. Weak but repeated signals can accumulate into powerful systemic pressure.	*Basic*: Count frequency of recurring phrases or rituals. *Advanced*: Network mapping, social media amplification studies.
Equity Lens	Whose grief is legitimized (executives' stress vs. frontline burnout)? Who is ignored (migrant workers, junior staff)?	Unequal recognition corrodes legitimacy and increases systemic fragility (Butler, 2004).	*Basic*: Ask "who is missing?" in coverage or data. *Advanced*: Equity audits, intersectional coding (Crenshaw, 1991).
Worldview & Metaphor	Language: "throughput," "efficiency," "coverage" (mechanistic) vs. "team," "community,"	Metaphors structure action (Lakoff & Johnson, 1980). Mechanistic frames suppress grief;	*Basic*: Collect 20 recurring phrases and sort by frame. *Advanced*: Causal Layered Analysis (Inayatullah, 1998).

	"balance" (relational).	ecological/relational ones enable repair.	
Temporal Focus	Past: nostalgia for "golden age" of work. Present: fatigue and staff churn. Future: anticipatory dread of future crises, automation, or layoffs.	Temporal stacking shows grief operating across multiple horizons. Misalignment between institutional timelines (quarterly reports) and grief timelines fuels fragility (Pierson, 1993; Poli, 2010).	*Basic*: Categorize signals as past/present/future. *Advanced*: Three Horizons mapping, policy feedback analysis.
Multispecies Signals	Workplace schedules ignoring circadian rhythms, ecological grief over "always-on" culture, metaphors of exhaustion tied to natural collapse.	Recognizing ecological and multispecies grief prevents extractive logics from being replicated in human systems (Kimmerer, 2013; Whyte, 2018).	*Basic*: Note natural metaphors in stories (e.g., "drained," "running on fumes"). *Advanced*: Chronobiology data, ecological systems integration, kinship-based analysis.

Table 5.1 Cultural Signals Framing and examples

How I would use the Ladder in practice

1. **Place the signal.** Pick the rung that best fits current practice. Err on the conservative side.
2. **Name the pattern.** Rising, plateauing, or receding. Note any archetype that seems active.
3. **Pick a pacing move.** If rising, choose one **recognition** move and one **structural** move to consolidate.
4. **Verify.** Choose a small indicator, a review date, and a kill switch. Retire any metric that begins to distort behavior.

Why this might matter

Many institutions struggle to measure how grief and allied emotions travel through systems. The Ladder offers a **shared language for trajectory**. Paired with **Cultural Signal Framing**, it rounds out the foresight toolkit: Three Horizons helps me read **temporal layers**, CLA helps me read **depth**, and the Ladder helps me read **movement** (Inayatullah, 1998; Sharpe et al., 2016). My aim stays modest and practical. If this helps us treat grief less as inefficiency and more as **intelligence**, the tool will have earned its place.

5.6 Interpreting Results

When I began testing the framework, I realized that the most difficult step was not gathering signals or mapping impacts. It was knowing what to do with the results. Many organizations already collect data in some form; surveys, exit interviews, trust scores, biodiversity indices, but they rarely know how to read these through the lens of grief. My aim with this section is to make interpretation simple enough for a community organizer to use with sticky notes, yet robust enough for a policy unit or research team to connect to advanced methods.

Reading Without a Data Background

The simplest way to interpret results is to look for **patterns across the steps** of the framework. Ask:

- **Which forms of grief show up most often?** If burnout, displacement, or ecological despair appear repeatedly, that is not noise; it is a driver.
- **Where do impacts cluster on the Impact Ladder?** If most signals stall at L1 or L2, the system is acknowledging grief symbolically but not acting on it. If reforms exist at L3–L4 but people remain cynical, it means legitimacy has not caught up.
- **What metaphors dominate?** If leaders talk about "throughput" while communities talk about "loss," there is a narrative gap. That gap predicts misalignment.
- **What is the slope?** Are things slowly gaining traction, or has there been a sharp rise followed by decline? Steady slope is more reliable than spikes.

Even without statistical tools, these observations tell you whether grief is being dismissed, ritualized, or transformed. They help set priorities: Do we need more recognition rituals? More translation into policy? More work to shift metaphors?

More Sophisticated Approaches

For teams with analytical capacity, the framework can be deepened with existing tools:

- **Thematic coding and sentiment analysis.** Qualitative coding (Braun & Clarke, 2006) can identify recurring themes across testimonies, media, or protest placards. Sentiment tools can help, but need to be layered with Cultural Signal Coding so they do not flatten nuance.
- **Network analysis.** Mapping hashtags, citation networks, or organizational partnerships shows how grief signals spread. This can reveal whether energy is stuck in silos or diffusing across systems (Borgatti et al., 2009).
- **Longitudinal tracking.** Following the same signal over months or years allows slope to be measured directly. Time-series methods or simple before/after comparisons can help here.
- **Comparative scenario testing.** Placing signals in foresight exercises such as stress-testing them against collapse, discipline, growth, or transformation scenarios (Dator, 2009) shows whether grief will become a catalyst or a block.
- **Cross-domain triangulation.** Overlaying grief signals with existing KPIs (attrition, biodiversity, trust scores) creates mixed-methods evidence that appeals to decision-makers.

A Pragmatic Rule of Thumb

When I introduce this to practitioners, I suggest a simple progression:

1. **Start simple.** Write down the top three griefs you hear most often.
2. **Place them on the Impact Ladder.** Are they at awareness, practice, reform, or narrative shift?
3. **Ask about slope.** Are things rising, stalling, or reversing?
4. **Layer more tools if needed.** If you have capacity, add coding, networks, or longitudinal tracking.

Interpretation does not need to be perfect. What matters is cultivating a habit of asking: **what is grief telling us about the system?** Once that question becomes routine, the method can scale in complexity as needed.

Why Interpretation Matters

Without interpretation, the framework risks becoming another workshop exercise. With it, grief becomes legible as systemic signal: burnout linked to safety incidents, ecological grief linked to legitimacy crises, cultural grief linked to policy reform. Interpretation makes

grief usable. It allows foresight practitioners, policymakers, and communities alike to turn sorrow into foresight, making decisions not only based on efficiency or growth but on continuity, meaning, and care.

5.7 Linking to Public Sentiment Models and Spillover Detection

One of the recurring questions in my work is how to know when grief will remain contained and when it will spill into something larger such as policy debates, mass mobilizations, or systemic reforms. The Impact Ladder and Cultural Signal Coding are my starting points, but I also triangulate them with well-established models from political science, sociology, and systems theory. This provides both accessibility for practitioners who need a quick read of momentum, and rigor for experts who want theoretical grounding.

Reading Signals Through Public Sentiment Frameworks

Overton Window. The Overton Window describes how ideas move from "unthinkable" to "policy" (Lehman, 2010). By placing grief signals along the Ladder *and* along the Overton spectrum, I can see both cultural traction and institutional proximity. For example, if a demand sits at I2 in local practice but remains "radical" in Overton terms, the work is to find bridge frames that move it into "acceptable" without erasing its meaning. Coding helps identify those frames in the cultural corpus people already trust.

Threshold and contagion dynamics. Systems often change not incrementally but suddenly when thresholds are crossed. Granovetter's threshold model (1978) and Centola's work on complex contagion (2018) show that some behaviors spread with a single exposure, while others require reinforcement through trusted ties. A grief signal that combines high-cost participation (such as marches or vigils) with visible solidarity often signals a complex contagion. In systems terms, this means reinforcing loops are forming, and once a critical mass is reached, escalation can be rapid.

Punctuated equilibrium and venue shifts. Baumgartner and Jones (1993) demonstrated that issues often remain in long plateaus until framing and institutional venue align, after which rapid change follows. I see this reflected in coding: a signal moving from lifestyle sections into business news, or from local councils into national courts. Venue migration, when combined with an upward slope on the Ladder, is a strong precursor to punctuated change.

Issue attention and fatigue. Downs's issue-attention cycle (1972) reminds us that attention is finite. I use the Ladder to balance momentum with pacing. A steep spike at I0 that brings in multiple emotions but fails to build durable local practice often risks burnout. In such cases, the better strategy is not more spectacle but deliberate rest and consolidation. Systems fail when they chase intensity without rhythm (Holling, 1973; Walker & Salt, 2006).

Indicators of Spillover

Over years of practice, six indicators have been especially predictive that grief is about to spill into larger systems:

1. Converging metaphors across sectors (e.g., healthcare grief and ecological grief both framed through "exhaustion").
2. A shift from personal testimony to communal solidarity in the emotion mix.
3. Cross-venue migration of coverage (local → national; lifestyle → policy).
4. Movement from symbolic acts (L1) to repeatable local practices (L2).
5. Endorsements or uptake by boundary spanners who bridge diverse audiences.
6. A measurable pause in counter-frames, often visible as silence rather than rebuttal.

When three or more of these are present, and the Ladder slope is positive, I begin advising leaders to prepare for scale. In system dynamics language, this is a sign that reinforcing feedback is overtaking balancing feedback, and a phase shift may be imminent.

Putting It Together: From Signals to Strategy

The practical loop I use in projects follows a consistent rhythm:

1. **Assemble the archive.** Collect a small but diverse set of cultural artifacts from the past eight to twelve weeks. Include both the quiet (local rituals, small vigils) and the spectacular (protests, viral hashtags).
2. **Code with nuance.** Apply Cultural Signal Coding. Preserve the texture of quotes, songs, or images so complexity is not lost in abstraction.
3. **Place on the Ladder.** Identify the current rung for each signal and estimate slope by comparing recent movements.
4. **Triangulate with sentiment models.** Position core proposals along the Overton Window. Track venue shifts, contagion thresholds, and pacing risks.
5. **Name the stall or surge.** Ask whether the pattern shows ritual without uptake, policy without legitimacy, or a nonlinear jump.

6. **Choose leverage and pacing.** Select one recognition move (symbolic but necessary) and one structural move (policy or reform). Adjust cadence to match slope and contagion type.
7. **Measure differently.** Pair traditional KPIs (turnover, trust, biodiversity) with qualitative indicators from the Ladder and coding. Review after four to six weeks.

This cycle is designed to be accessible. It can be run with sticky notes and community meetings, or with advanced data analysis and network mapping. The tools scale up or down, but the underlying philosophy remains constant: grief is not inefficiency, it is systemic feedback. The work is to listen to it carefully, translate it responsibly, and design with it rather than against it.

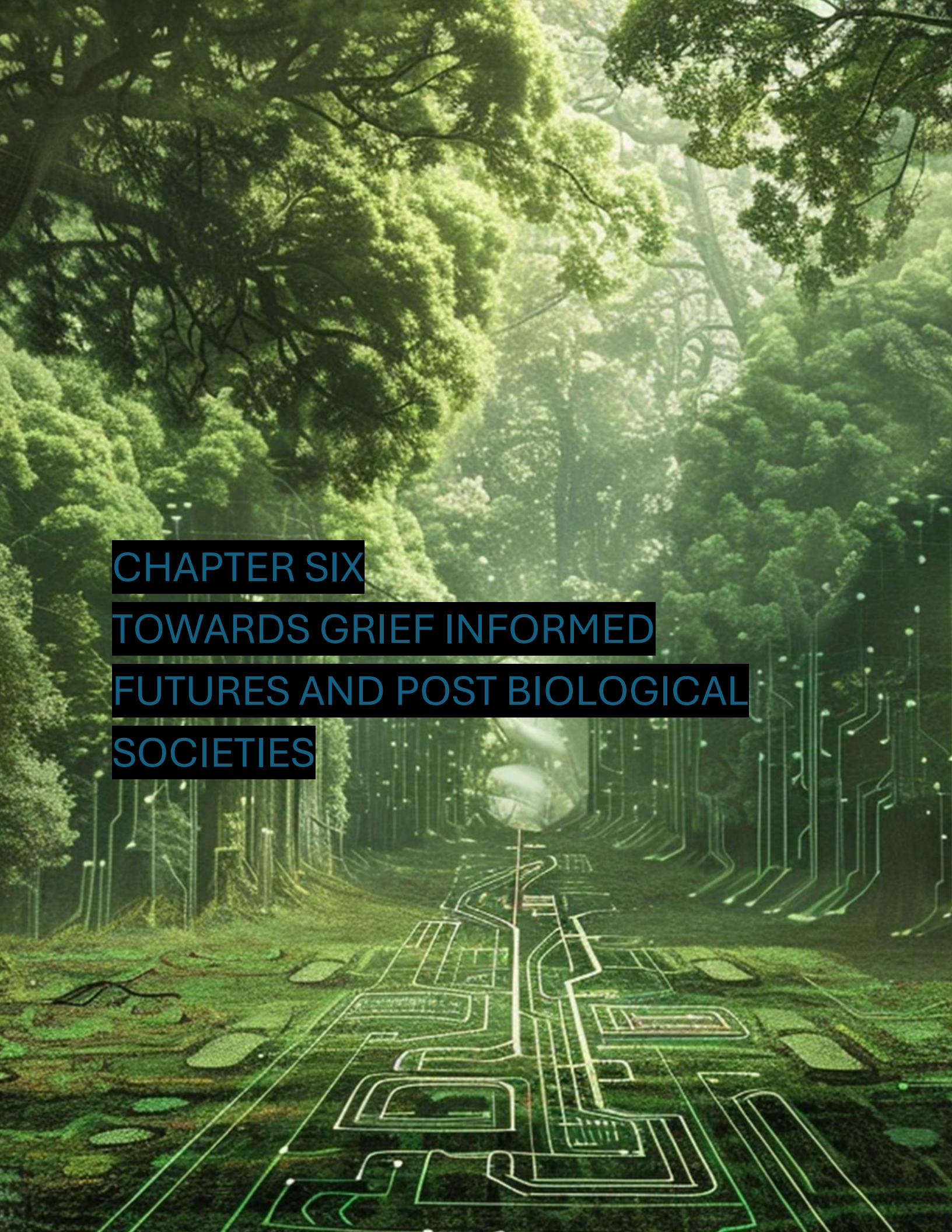
Integrating grief into models of public sentiment bridges two traditions that rarely meet. Political science tells us how issues move through institutions. Systems theory tells us how feedback loops, pacing, and thresholds shape adaptation. By adding grief into the equation, we gain an instrument for anticipating not only how systems will shift, but *why* they shift when they do. For experts, this is a way to enrich models of collective action and policy change. For communities, it is a way to turn mourning into strategy.

5.8 Conclusion

The PACER (Pace, Affect, Culture, Ecology, Resilience) process model is usable across settings. Municipal governments can use it to interpret protests. Hospitals can use it to understand burnout. Businesses can use it in change management. NGOs can use it to translate ecological grief into strategy. Newsrooms can use it to report responsibly on tragedy. It is also able to be used to map the impact of multiple emotions or sentiments.

Its value lies in making grief interpretable as systemic feedback. It surfaces hidden drivers, reveals attachments, exposes justice gaps, and strengthens foresight. It offers leaders a way to design with emotional fluency and cultural continuity, rather than treating grief as inefficiency to be suppressed.

In a century of climate disruption, technological acceleration, economic volatility, and conflict, the stakes are clear. Ignoring grief means misreading the conditions of adaptation. Designing with grief means building institutions capable of continuity across generations and worlds wider than the human.



CHAPTER SIX
TOWARDS GRIEF INFORMED FUTURES AND POST BIOLOGICAL SOCIETIES

6.0 What were the issues?

I began with the observation that grief is everywhere yet rarely named in the systems that govern our lives. Workplaces grant three days of bereavement leave for losses that often take years to metabolize. Cities erase cemeteries or historic neighborhoods as if continuity were expendable. Policies count measurable outputs but fail to register what is lost. When grief is acknowledged, it is often treated as inefficiency or weakness.

6.1 What is my contribution?

PACER is one attempt to respond. It is less a universal answer than a working approach: a framework that treats pacing, cadence, and renewal as design variables in their own right. It builds on insights from systems theory, foresight, Indigenous teachings, and design justice to argue that continuity should be treated with the same seriousness as efficiency or growth.

My contribution lies in reframing grief as systemic. Instead of being understood as private downtime, I present it as infrastructural load that travels through bodies, households, organizations, and societies. PACER's stages of observe, frame, trajectory/cadence, offer scaffolds that hold this load without collapsing it into pathology or a single metric.

6.2 The journey

This thesis traced grief across scales. I began with bodies and brains, where loss reshapes physiology and cognition. I followed it into classrooms, workplaces, and communities, where it shapes belonging and trust. I examined nations, where historical injustices remain unresolved, and global systems, where grief travels through migration, climate, finance, and humanitarian response.

Along the way, I drew from systems thinkers who taught me to look for loops and leverage, foresight scholars who showed how metaphors act like seeds, and Indigenous teachers who reminded me that continuity includes land, ancestors, and more-than-human kin. I learned from civic centers, healthcare spaces, and policy contexts where grief was often the unspoken current beneath conversations about risk, budgets, or performance.

What systems theory suggests

Systems theory tells us that feedback loops matter. Suppressed grief does not vanish; it accumulates until it re-emerges as error, attrition, or backlash (Meadows, 2008). Leverage points matter: paradigms and metaphors shape what becomes visible or invisible. Path dependence means that once metaphors harden into infrastructure, they are difficult to reverse (David, 1985). Double-loop learning offers a chance for organizations to not only adjust tactics but question the beliefs behind them (Argyris & Schön, 1978). Safe-to-fail probes allow risk to be distributed and learning accelerated (Holling, 1973). Institutional isomorphism explains how once credible actors adopt grief-literate practices, others tend to follow (DiMaggio & Powell, 1983).

Peter Jones and David Ing argue that systems thinking should stay generative rather than prescriptive, always open to multiple epistemologies. Gary Metcalf and David Hawk emphasize that relationship and governance are as central as analysis. Mary Midgley warned against reductionism, reminding us that trying to explain human life only in fragments is like attempting to fix plumbing without looking at the entire house (Midgley, 2001). These insights shape PACER: it must remain adaptive, relational, and provisional.

Space for Grief as Case Study

The creation of Space for Grief was itself; an experiment that became a proof of concept for my team (Lee, Rawlings) and I to explore grief-informed futures in-depth. It did not emerge overnight, but through years of research, prototyping, and design at the intersection of systems theory, foresight, and art. Many of the insights leading to the formation of the PACER model, and my understanding of grief were shaped through this project.

The origins of Space for Grief lay in conversations with communities, organizations, and individuals who consistently voiced the same concerns voiced throughout this paper: grief was everywhere, but it was nowhere to be seen in public life. Leaders in healthcare, housing, and climate action admitted that grief shaped their work, yet no forum existed to address it collectively. Policy reports fell short; workshops touched the surface but rarely broke through stigma. The question emerged: What if grief itself could be made into a shared space?

This became the animating idea: to build a public installation not simply about grief, but a living demonstration of how grief might drive decisions, policies, and infrastructures. Drawing on foresight methods, I used Causal Layered Analysis to work across litany, systems, worldviews, and myth (Inayatullah, 1998), and systems archetypes to surface recurring feedback patterns that often hide in plain sight (Meadows, 2008; Senge, 1990).

The design process remained intentionally iterative, with sketches, narrative treatments, compositions, video prototypes, and full-scale environments tested across cultural and institutional contexts, consistent with reflective practice in design (Schön, 1983) and core principles in systemic and service design (Jones, 2014; Stickdorn & Schneider, 2011). At each step I asked a simple question that felt large: how might we move grief from silence to resonance, and do so in ways people can feel and understand (Mayer, 2009; Tufte, 1990)?

The final form of **Space for Grief** integrated four interwoven elements:

Education. I invited visitors into clear, accessible accounts of grief's causes, trajectories, and systemic consequences when it is ignored. That included burnout and presenteeism in workplaces, as well as ecological sorrow and solastalgia that communities increasingly report (American Psychiatric Association, 2022; Maslach & Leiter, 2016; Johns, 2010; Albrecht, 2012; Cunsolo & Ellis, 2018). The choice to keep the material narrative-rich rather than data-heavy followed evidence that story can scaffold comprehension and reflection in complex domains (Green & Brock, 2000), while aligning with human-centered and participatory design practices that legitimize lived experience (Sanders & Stappers, 2008; Norman, 2004).

Immersion. Music, moving image, and layered narrative provided affective entry points. I structured compositions to mirror oscillations often seen in bereavement research, with alternation between loss- and restoration-oriented coping (Stroebe & Schut, 1999). Neuroscience suggests why this might work. Musical tension and release recruit reward circuitry, including dopaminergic responses during anticipation and peak affect (Blood & Zatorre, 2001; Salimpoor et al., 2011; Zatorre & Salimpoor, 2013), while music regulates autonomic arousal and social emotions (Koelsch, 2014; Chanda & Levitin, 2013; Huron, 2006). Visual projections translated stocks, flows, delays, and feedback into sensory form so that participants could stand inside dynamics rather than only read about them (Meadows, 2008; Tufte, 1990). This pairing of sound and image was intended to support both understanding and felt meaning.

Kinetic space. Unlike static memorials, **Space for Grief** was designed for movement. Pathways invited walking, pausing, sitting, or meditating. Participants often reported that moving through space helped them metabolize feeling, which is consistent with research on embodied cognition and the role of posture, gait, and environment in emotion regulation and appraisal (Niedenthal, 2007; Shafir et al., 2016). Environmental psychology shows that nature-like features can lower stress and support restoration, which guided choices around light, texture, and pacing (Ulrich, 1984; Kaplan & Kaplan, 1989). Polyvagal theory also points to how safety cues in space could support regulation and social

engagement (Porges, 2011). The spatial choreography therefore suggested that grief may be processual and nonlinear.

Connection. Most crucially, the installation was communal. People entered as individuals and often left feeling part of something larger. Shared silence, synchrony, and the recognition that others grieve too seemed to dissolve isolation. Classic accounts of ritual and communitas describe these phenomena, and contemporary studies show that musical synchrony can increase social bonding and prosociality, sometimes through endorphin and hormone pathways (Durkheim, 1912/1995; Turner, 1969; Tarr, Launay, & Dunbar, 2014; Keeler et al., 2015; Holt-Lunstad et al., 2010). These findings helped me treat connection not as a by-product but as a design target.

The impact was immediate and widely felt. In Toronto, **Space for Grief** at Nuit Blanche drew large and diverse crowds over a single night. Families, frontline workers, and civic leaders, including the Mayor, shared the same kinetic field. Many described feeling lighter, seen, or unexpectedly connected to strangers. In Dubai, presenting the installation at the Museum of the Future to international leaders and futurists suggested that grief could be framed as a legitimate signal in governance and institutional design, not a private pathology. If taken seriously, such demonstrations could help open policy windows and translate emotional realities into foresight, agenda setting, and implementation (Kingdon, 2011; Sabatier, 1999; Sharpe et al., 2016). My hope is that this work might encourage practitioners to carry grief into the center of design conversations where strategy, policy, and infrastructure decisions are made.

Feedback from over 250,000 participants across Toronto, Dubai, and other venues suggested that Space for Grief (and it's spin-off We Remembered You, Too) worked not because it provided new data, but because it validated feelings, legitimized grief, and transformed private pain into shared resilience. It revealed that immersive experiences can succeed where reports fail: they move people from cognitive acknowledgment to embodied recognition.

The case study demonstrates a critical lesson: grief-informed futures are not only theoretical but leveraging built form architecture, sensory stimulation and simple text based prompts, it was possible to impact people positively at scale. By weaving education, immersion, physicality, and connection, Space for Grief showed how art and foresight can collaborate to create public infrastructures of care.

6.3 Gaps, biases, and blind spots

This work is necessarily incomplete. My cases reflect where I have lived, worked, and studied, which means they lean toward Western, English-speaking, and urban contexts. I may have missed rural, oral, and non-Western repertoires where grief is practiced and transmitted differently.

The models I propose, such as the Cultural Signals Framing and the Impact Ladder, should be treated as prototypes. They orient attention but have not yet been stress-tested across settings, cultures, and disciplines. They need reliability studies, error bounds, and cross-cultural validation before they could be used for high-stakes governance.

There is also a danger of ritual theatre. Acknowledgment without material repair can soothe optics but deepen mistrust. Recognition must not collapse into pathologization either. Sadness is not necessarily dysfunction, and there is a thin line between naming grief and medicalizing it in ways that over-rely on prescriptions while leaving social supports untouched.

Power and consent are central. Surfacing grief may expose people to new risks if confidentiality and sovereignty are not respected. This is especially true when working with Indigenous, diasporic, or marginalized communities where histories of extraction run deep. Without careful protocols, what is meant as recognition could become another form of harm.

Accessibility is another gap. The framework still assumes literacy, connectivity, and institutional bandwidth. Digital divides, language barriers, and differences in ability all require adaptation. A grief-informed future must be built to work in classrooms, clinics, and councils where resources are stretched and translation is needed.

Finally, while I gesture toward ecological grief, much of my data and analysis privilege human experience. If grief is indeed part of system adaptation, then the losses of ecosystems, species, and more-than-human kin deserve equal attention. At present, they remain underrepresented in this framework.

These are the blind spots I see most clearly. Others will see more. My hope is that by naming them, I make it easier for others to refine, extend, or correct what is offered here.

6.4 Research and development agenda

The work here is a beginning, not an endpoint. If grief is to be treated as a systemic variable, then the framework must keep evolving. Several threads seem most urgent to me.

Metric validation. The Cultural Signals Framing, Impact Ladder, and continuity indicators are still prototypes. They need reliability testing across cultures, languages, and sectors. Cross-cultural studies could help reveal whether patterns that feel obvious in one place hold in another, or whether the models themselves need to be re-formed.

Longitudinal research. Most of the studies I draw on, and most of my own cases, track grief over months. The effects that matter most for governance such continuity, trust, resilience play out over years or generations. A longer horizon is needed to see whether small grief-aware adjustments compound into structural stability.

Tooling for practice. If grief-aware design is to travel, it must be usable by non-experts. That might mean lightweight facilitation kits, templates for recognition protocols, or open-source dashboards that make cadence visible. The aim is not to professionalize grief but to make it easier for communities, organizations, and policymakers to acknowledge it in ordinary work.

Policy templates. Governance needs model clauses that make grief legible in contracts, procurement, and standards. These would not pathologize sorrow but set expectations for recognition, repair, and continuity. They might cover bereavement leave, community consultation after sentinel events, or loss-and-damage mechanisms in international negotiation.

AI alignment. As digital systems increasingly mediate memory, mourning, and identity, I am concerned that grief could be erased or misclassified. Training data, evaluation metrics, and interface design all carry this risk. I would want to see grief-aware practices in AI development: protocols for digital legacies, bias checks around loss, and ethical guidelines for memory stewardship.

A commons of practice. This work cannot belong to one author or institution. A shared repository of cases, failures, adaptations, and tools could act as a living archive. The point would not be a closed club but an open commons that practitioners across disciplines can draw from, contribute to, and improve.

I am also committed to testing these ideas in practice. We have multiple **Space for Grief** prototypes planned in Canada and the UK, alongside projects in development across

Australia, Singapore, and Dhaka. Each context will teach something new, and each will test whether the principles hold under different cultural, ecological, and political conditions. My hope is that by working internationally, the framework itself will become less parochial and more accountable to plural ways of knowing and grieving.

What I would carry forward is not only a research program but a stance. The stance is to keep learning, refining, and evolving alongside the world, while holding fast to values of dignity and ethics for human and more-than-human life in our shared ecologies. If PACER is to have value, it will be because it helps people design not only for throughput and efficiency but for continuity, memory, and care.

Closing reflections

Philosophers remind us that grief is not weakness. Aristotle saw mourning as part of the architecture of a good life. Stoics sought equanimity rather than denial. Daoist and Confucian sources valued harmony, not permanent cheer. Existentialists like Kierkegaard, Camus, and Frankl argued that finitude is the ground of meaning. Indigenous teachings frame grief as continuity work, repairing ties across people, ancestors, land, and future generations. International worldviews, from ubuntu in Africa to ayni in the Andes, remind us that no one grieves alone.

If I justify a grief lens, I do so not by claiming universality but by asking: what might change if we designed with grief in mind? The answer is not magic. It is pragmatic. I suspect it would reduce preventable errors, attrition, and mistrust. It might make reforms more realistic, services more humane, and institutions more resilient.

The future will bring more grief through climate shocks, displacement, and technological upheaval. Our choice is not whether grief will arrive, but whether we will design for it. To deny is to corrode. To design with grief is to metabolize loss into continuity and care.

PACER is one scaffold among many. It is not the last word. I invite others to adapt, refine, and challenge it. If design is about making the world more habitable, grief-informed design may be the craft of keeping it livable when it hurts. That is not sentimentality. It is survival. And perhaps the ground on which more generous futures can be built.

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Cultural infrastructures of grief

Death, mourning, and bereavement traditions

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Appendices

Note: Each appendix is referenced in the body text where relevant. Order here follows first citation order.

Appendix A: Frameworks Used in Research and Creation

In business strategy, **Porter's Five Forces** illustrates competitive pressures, **Blue Ocean Strategy** suggests creating uncontested markets, and the **Business Model Canvas** visualizes value creation and capture (Porter, 1980; Kim & Mauborgne, 2005; Osterwalder & Pigneur, 2010). **Dynamic capabilities** highlight how resilience depends on adaptation under uncertainty (Teece, 2010). Hirschman's **Exit, Voice, and Loyalty** adds a social mechanism lens, describing how people respond to decline—by leaving, speaking up, or staying—and opening a doorway into understanding civic grief when institutions falter (Hirschman, 1970). These frameworks make clear that grief is not outside economics but is a hidden factor shaping value, legitimacy, and adaptation.

1) Psychology and Grief Studies

- **Kübler-Ross's Five Stages (1969).** Classic model, used here to contextualize public discourse rather than as method. Limitations include linearity and cultural generalization.
- **Stroebe & Schut's Dual Process Model (1999).** Grief as oscillation between loss-oriented and restoration-oriented activity. Better fit with systemic pacing and adaptive cycles.
- **Doka's Disenfranchised Grief (1989; 2002).** Highlights invisible losses such as miscarriage, job loss, identity transition, and ecological grief. Applied to layoffs, athlete transitions, migration, and climate grief.
- **Neuroscience of Grief.** Evidence for neural and physiological load, including pain pathways and stress cardiomyopathy, frames grief as embodied not "noise" (O'Connor, 2019; Wittstein et al., 2005).
- **Trauma-Informed Practice.** Principles of safety, trust, empowerment, collaboration, and cultural responsiveness adapted for workshops, policy analysis, and design (SAMHSA; Jones, 2013 for care contexts).

Why included. These frameworks legitimize grief as physiological, cognitive, and cultural, shifting it from "soft" topic to infrastructural driver.

2) Systems Thinking and Complexity Science

- **Meadows' Feedback Loops and Leverage Points (2008).** Central for mapping reinforcing and balancing grief loops across organizations and communities.
- **Senge's Systems Archetypes (1990).** "Fixes that Fail," "Shifting the Burden," "Tragedy of the Commons," and "Success to the Successful" surfaced around grief avoidance and performance pressures.
- **Forrester's System Dynamics (1961).** Technical grounding for causal loop diagrams and stock-and-flow thinking applied to grief pacing.
- **Capra & Luisi's Living Systems View (2014).** Shift from mechanical to biological metaphors; grief as adaptive cycle within living systems.
- **Rosen & Rosen, anticipatory systems.** Grief framed as forward-oriented capacity for sensemaking, not only backward-looking memory.
- **Margulis, symbiogenesis (1998).** Reframed resilience around cooperation, informing metaphors of mutualism in grief and continuity.

Why included. Systems scaffolding makes invisible grief infrastructure legible and modellable across sectors.

3) Strategic Foresight

- **Causal Layered Analysis, CLA (Inayatullah, 1998).** Surfaced litany, systemic, worldview, and myth layers around grief and reframed metaphors.
- **Anticipatory capacity (Slaughter, 2002).** Positioning grief as anticipatory intelligence.
- **Three Horizons (Sharpe, 2013).** Mapped grief-aware transitions from brittle present to resilient futures.
- **STEEPLED scanning.** Located signals of grief across social, technological, ecological, economic, political, legal, ethical, and demographic domains.
- **Experiential Futures (Candy & Dunagan, 2017).** Guided immersive translation of systems drivers into felt experience in Space for Grief.

Why included. Adds temporal depth and practice tools so grief is framed as past, present, and anticipatory.

4) Behavioral Economics and Decision Science

- **MINDSPACE (Dolan et al., 2010).** Lens on norms, defaults, salience, and affect that suppress or surface grief.

- **Choice architecture and nudges.** Defaults like three-day leave shape culture without deliberation.
- **Prospect Theory (Kahneman & Tversky, 1979).** Explains short-termism and risk choices under grief and uncertainty.

Why included. Shows how grief shifts risk perception and decision quality, and where design can rebalance.

5) Design, Immersion, and Pedagogy

- **Design Thinking.** Empathy interviews, prototyping, and iteration for grief-informed tools.
- **Journey mapping.** Traced griever pathways through courts, city halls, and healthcare.
- **Co-design.** Worked with artists, youth, and Indigenous knowledge holders to co-create prototypes.
- **Immersive design and museum learning (Bishop, 2005; Simon, 2010).** Positioned Space for Grief as systems pedagogy.
- **Speculative design (Dunne & Raby, 2013).** Generated artifacts that stretched public discourse.
- **Ritual and symbolism.** Drew from anthropology and luxury craft to integrate sensory and material cues.

Why included. Turns analysis into lived understanding and practice.

6) Policy, Governance, and Comparative Research

- **Comparative bereavement policy baselines.** Used sectoral and country benchmarks to expose shortfalls and opportunities.
- **Truth and Reconciliation Commission of Canada (2015).** Model for institutionalizing grief recognition and continuity.
- **OECD and wellbeing frameworks.** Connected grief to quality of life and productivity measures.
- **Cross-national cases.** Bangladesh, Germany, Canada, Rwanda, Iceland, New Orleans informed links among untended grief, governance, and adaptation.

Why included. Connects grief literacy to legitimacy, risk, and stability.

7) Decolonizing and Indigenous Research Methods

- **The Sôhkêpayin Guide (Baerg et al., 2024).** Relational protocols for respecting Indigenous knowledge and avoiding data colonization.
- **Four Rs (Kirkness & Barnhardt, 1991).** Respect, Reciprocity, Relevance, Responsibility.
- **OCAP principles and FNIGC guidance.** Indigenous data sovereignty in design and evaluation.
- **Relational accountability (Wilson, 2008).** Methods that center relationships, ceremony, and consent.
- **Kimmerer, Mead, Allen.** Ecological reciprocity and continuity across global Indigenous contexts.

Why included. Grounds the work ethically beyond Western frames.

8) AI, Technology, and Post-biological Futures

- **Algorithmic bias and emotional erasure.** Risks of grief pathologized as "negative sentiment" and cultural disappearance in models (Buolamwini & Gebru, 2018; Bender et al., 2021; Noble, 2018; Crawford, 2021).
- **Anticipatory AI.** Limits of prediction vs wisdom and the need for procedural justice and narrative channels.
- **Design for Care (Jones, 2013).** Humane models for AI-supported care contexts.
- **Cybernetics to living systems shift.** Historic reliance on machine metaphors and rationale for ecological metaphors in AI futures.

Why included. Extends grief-aware design to AI–human co-evolution.

Appendix B: Global and Indigenous Approaches to Grief, Gendered Variations, and Influence on this Research

Indigenous Approaches

- **Turtle Island, First Nations, Métis, Inuit.** Grief is relational and extends to land and future generations. Ceremonies such as smudging, feasts, memorial fires, and seasonal observances act as collective processing. Gendered roles exist yet vary by Nation; women often lead songs or caregiving rituals while men may hold protective or ceremonial roles (Wilson, 2008; Kirmayer et al., 2014).

Research impact. Emphasis on grief as foundational to concepts of continuity, reciprocity, and collective witness (Baerg et al., 2024; TRC, 2015).

- **Māori tangihanga, Aotearoa New Zealand.** Multi-day communal mourning with whānau and iwi, blending formal oration and waiata tangi. Emotion moves between tears and laughter.
  Research impact. Temporal pacing and oscillation informed ritual design and evaluation.
- **Andes, Quechua and Aymara.** Ayni reciprocity links grief with obligations across generations and ecosystems. Household shrines and communal remembering are common (Allen, 2002).
  Research impact. Strengthened reciprocity as a design principle for ecological grief.
- **Ainu perspectives, Japan.** Rituals that honor kamuy and ancestors through offerings and song, linking place, non-human kin, and continuity.
  Research impact. Informed kinship-centric framing in Space for Grief.

Global Practices

- **Ireland, wakes and keening.** Story, music, laughter, and lament interweave. Women traditionally lead keening; hospitality and hosting are communal responsibilities (Walter, 1994).
  Research impact. Informed the sound and voice approach in Space for Grief.
- **Japan, Obon.** Annual welcoming of ancestors through dance, lanterns, and offerings. Grief is cyclical, not event-based (Nelson, 2006).
  Research impact. Seasonal structuring and cyclical pacing in installations.
- **Ghana, fantasy coffins.** Identity expressed through crafted coffins; funerals as extended community events with dance and storytelling (Quarcoopome, 1987).
  Research impact. Validated aesthetic boldness and symbolism as continuity, not excess.

Gendered Dimensions

- **Masculine-coded grief.** Norms of stoicism and redirection into work, risk, or aggression, visible in elite sport and leadership cultures.
- **Feminine-coded grief.** Ritualized lament and caregiving, often devalued as "emotional labor," with higher exposure to disenfranchised grief (Doka, 1989).
- **Non-binary and queer experiences.** Compounded disenfranchisement through social and policy erasure; growing research base.

Influence on this research.

- Framework design centered reciprocity and relational accountability.
- Emotional fluency as intelligence challenged organizational stoicism.
- Space for Grief drew on lament structures, seasonal cycles, and participatory ritual.
- Policy proposals treat grief literacy as a public health and gender equity issue.

Key takeaway. Grief is relational, cultural, ecological, and gendered. Systems that honor these differences gain resilience; those that ignore them amplify destabilization.

Appendix C: Causal Layered Analyses of Grief Across Sectors

Primer. CLA looks beneath headlines to structures, worldviews, and deep metaphors that sustain patterns (Inayatullah, 1998).

Below are concise CLAs for major contexts referenced in the research. Each lists Litany, Systemic causes, Worldview, Myth or metaphor, and a practical implication.

1. **Corporate and Workplaces**

- Litany: Absenteeism, presenteeism, safety incidents, disengagement (Grief Recovery Institute, 2003; Gallup, 2022).
- Systemic: Minimal bereavement leave, output-only KPIs, always-on tools, compliance-centric HR.
- Worldview: Professional equals emotionless.
- Myth: “Well-oiled machine,” “leave your baggage at the door.”
- Implication: Invisible grief loads surface later as errors, churn, and brand crises.

2. **Governments and Cities**

- Litany: Post-disaster PTSD, protest cycles, mistrust, service backlogs.
- Systemic: Event-centric emergency management, short leave, no civic grief protocol.
- Worldview: Fix roads and the community will heal.
- Myth: “Back to normal.”
- Implication: Physical rebuilds without social repair undermine legitimacy.

3. **Healthcare**

- Litany: Burnout, compassion fatigue, secondary trauma.
- Systemic: Throughput incentives, turnover metrics, limited psychological safety.
- Worldview: Care is a pipeline; emotion is leakage.
- Myth: “Clinical sterility.”
- Implication: Treating bodies as machines undermines healing and retention.

4. **Sports Organizations**

- Litany: Injury cycles, identity loss post-peak, quiet distress after wins.
- Systemic: Tour cadence, performance contracts, stigma in high performance.
- Worldview: Toughness equals silence.
- Myth: “Play through the pain.”
- Implication: Hidden grief degrades long-term performance and welfare.

5. **Arts and Culture**

- Litany: Burnout, precarity, algorithmic censorship.
- Systemic: Micro-royalties, grant scarcity, hustle norms.
- Worldview: Art equals content.
- Myth: “The show must go on.”
- Implication: Grief fuels art while artists lack safe processing space.

6. **Food Systems and Entrepreneurship**

- Litany: Venture grief, inequity fatigue, failure stigma.
- Systemic: Thin margins, biased capital access, fragile supply chains.
- Worldview: Founder heroism.
- Myth: “Sink or swim.”
- Implication: Personal losses compound into structural exclusion.

7. **Housing and Shelter Networks**

- Litany: Staff turnover, moral injury, community distrust.
- Systemic: Crisis funding, short contracts, paperwork load.

- Worldview: Triage forever.
- Myth: “Bailing water from a leaking boat.”
- Implication: Emergency becomes the steady state.

8. **Climate NGOs**

- Litany: Doom loops, internal conflict, campaign fatigue.
- Systemic: Urgency funding, output-only metrics, invulnerability culture.
- Worldview: The good activist does not falter.
- Myth: “Hold the line at all costs.”
- Implication: Anticipatory grief without ritual becomes paralysis.

9. **National Cases**

- Bangladesh: Partial justice and politicized memory generate legitimacy crises.
- Germany: Technical reunification without identity repair fuels populist narratives (Assmann, 2011; Berdahl, 1999).
- Canada: Apology without full remedy keeps grief as system load until Calls to Action are implemented (TRC, 2015).

10. **Space for Grief (method and intervention)**

- Litany: Reports do not move hearts; closed-door briefings stall insight.
- Systemic: Cognitive-only pedagogy and risk-only frames.
- Worldview: Feeling is unprofessional.
- Myth: “If it is not in a spreadsheet, it is not real.”
- Implication: Immersive ritual surfaces grief as shared infrastructure and unlocks learning.

Appendix D: MINDSPACE of Grief Across Sectors

Primer. MINDSPACE is a practical checklist for culture change using Messenger, Incentives, Norms, Defaults, Salience, Priming, Affect, Commitments, and Ego (Dolan et al., 2010).

Each sector below lists high-leverage cues you can implement now.

- **Corporate and Workplaces:** Senior leaders as messengers; protected leave and phased return incentives; visible rituals at all-hands; auto-enroll supports with easy opt-out; quiet rooms and remembrance walls; care charters; frame participation as mastery and leadership.
- **Governments and Cities:** Mayors, Chiefs, Elders, and Survivors as messengers; fund community-led memorialization; default grief supports in disaster plans; memorial landscapes; resolutions with public tracking.
- **Healthcare:** Senior clinicians and respected nurses as messengers; protected time for debriefs; unit-level rituals; automatic counseling offers; calm spatial cues; reflect and learn logs.
- **Sports:** Coaches and captains as messengers; performance contracts that protect rest; decompression rituals; recovery in calendars; family-friendly reflective spaces.
- **Arts and Culture:** Curators and respected artists; grief-informed programming and fair pay; post-show circles; embedded counseling links; sensory pacing for safe holding.
- **Food Systems and Entrepreneurship:** Trusted mentors; safety nets for restart; founder circles; accessible mental health; restart playbooks.
- **Housing and Shelter:** Veteran staff and Elders; retention-oriented incentives; mandatory recovery days; calm staff spaces; trauma-informed practice pledges.
- **Climate NGOs:** Scientists and organizers modeling vulnerability; fund pacing and care; grief circles; nature-connected routines; wellbeing metrics.
- **National cases and Space for Grief:** Tailored messengers, defaults to participation, high salience via multisensory cues, public commitments, and civic pride in care.

Appendix E: Instruments, Protocols, and Evaluation Materials

E1. Interview and Workshop Guides

- Semi-structured interview guide for grievers, practitioners, and leaders.
- Co-design workshop script with consent prompts and closing rituals.
- Reflection prompts for Space for Grief participants.

E2. Consent, Care, and Debrief

- Plain-language consent outlines for participants.
- Voluntary participation, withdrawal, and anonymity options.
- Debrief sheets with resources and contacts for support.

E3. Sampling and Recruitment Notes

- Purposive and snowball sampling for sectoral diversity and lived experience.
- Inclusion of Indigenous, youth, and frontline perspectives with appropriate relational protocols.

E4. Space for Grief: Technical and Evaluation Summary

- Spatial specification: footprint, lighting, soundscapes, material palette, accessibility features.
- Safety and care: quiet exits, seated areas, hosts trained in trauma-informed practice.
- Mixed-methods evaluation: short pre-post prompts, optional interviews, observational notes, and anonymous comment cards.
- Analysis approach: thematic analysis mapped to CLA layers and systems patterns.

Appendix F: Data Availability, Ethics, and Sovereignty

- **Data availability.** Aggregated findings and non-identifying excerpts are available upon reasonable request. Raw data with personal identifiers is not shared.
- **Ethical practice.** All engagements followed trauma-informed and care-centered protocols.
- **Indigenous data sovereignty.** For any Indigenous-related materials, OCAP principles, the Sôhkêpayin Guide, and community agreements determine storage, use, and sharing.
- **Procedural justice for AI-related data.** Explanations, context notes, and appeals channels accompany any automated analysis used in this research.

Appendix G: Accompanying Digital Materials

If uploaded to the Open Research Repository, list and describe the files clearly.

1. **The Sôhkêpayin Guide (Baerg et al., 2024).** PDF. Reference and protocol guide used to inform Indigenous engagement and data stewardship.
2. **Pathwaves Report (EN).** PDF. Systems change report informing public realm and ritual infrastructure insights.
3. **Curling Canada May 27th Presentation, edited.** PDF. Sector case example on engagement, ritual, and change pacing.
4. **Doyle, Christina. 2015 MDes SFIN MRP.** PDF. Prior OCAD U MRP informing methods and structure baselines.
5. **MRP Report, Rob Tilley, Final.** PDF. Comparative MRP with relevance to foresight framing.
6. **Space for Grief, media stills and floor plan** (if hosting). Image set and schematic for archival reference.
7. **Grief-CLA and Ritual Canvas templates** (if hosting). Editable tools for replication in practice.

For each file in the repository, include: file name, type, one-line description, relation to chapters, and access rights.

Appendix H: Glossary of Key Terms

- **Anticipatory grief.** Sorrow for losses that are expected but have not yet occurred.
- **Causal Layered Analysis (CLA).** Foresight method that examines litany, systemic causes, worldviews, and myths.
- **Disenfranchised grief.** Grief that is not socially recognized or supported.
- **Grief infrastructure.** Rituals, policies, spaces, and practices that metabolize loss into continuity.
- **Life-centred design.** Design that considers human and more-than-human ecologies and time scales.
- **Procedural justice for AI.** Fairness practices that include explanations, context, and rights to challenge automated decisions.
- **Temporal stacking.** Layering of past, present, and future grief that compounds system stress.

Appendix I: The Grief-Informed Futures (GIF) Framework v1

Core Principles, the 7 R's

Recognition, Representation, Rhythm, Reciprocity, Repair, Ritual, Responsible AI.

Methods and Tools

- **Grief-CLA.** Surface litany, system, worldview, myth before interventions.
- **Temporal Grief Map.** Chart past, present, future grief across STEEPLED to set pacing.
- **Archetype Audit.** Detect "Shifting the Burden" and "Fixes that Fail."
- **Ritual Design Canvas.** Who, when, where, how to acknowledge and metabolize loss.
- **MINDSPACE Cue Pack.** Micro-interventions for language, defaults, and space.
- **AI Procedural Justice Checklist.** Fairness, explainability, appeals, and Indigenous data protocols.
- **Immersive Pedagogy Kit.** Experiential futures to convert data into felt understanding.

Operating Model

- **Practice layer, daily.** Bereavement policies, reflection rooms, story circles, debriefs.
- **Design layer, quarterly or annual.** Grief-aware services, architectural affordances, civic memorial infrastructure.
- **Governance and data layer, structural.** Metrics for continuity and trust, grief-aware AI standards, truth and repair cycles.

Cross-Sector No-Regrets Moves

Adopt grief protocols with safety standards, institutionalize closure rituals, add procedural justice to digital workflows, build reflection spaces, budget for renewal, pair analytics with embodiment, and track leading indicators like bandwidth, trust, retention, and cultural continuity.

A Simple Diagnostic

Recognition, Rhythm, Ritual, Repair, Representation, Responsibility, Resilience. Short prompts that leadership teams can use to self-assess and iterate.

A. Cultural Signal Coding: From Expression to Insight

A recurring challenge in grief-informed futures is methodological. Songs, films, vigils, hashtags, and rituals carry grief, but how do we move from diffuse expression to decision-grade insight? Conventional analytics, such as sentiment analysis, flatten complexity into crude binaries of "positive" or "negative." Grief, as my research and practice show, is layered, relational, and multispecies. Mechanistic approaches cannot capture this richness.

To address this, I developed a **Cultural Signal Coding rubric**, drawing on systems theory, Indigenous worldviews, affective science, and ethnographic practice. The aim is not to reduce grief to a number but to **translate cultural signals into structured insights** that policymakers, designers, and strategists can act on—while preserving the texture that makes grief meaningful.

Dimensions of Coding

1. Emotion Profile
Signals are coded for grief, anger, hope, and solidarity. Affective science shows these emotions shape behavior differently: grief deepens reflection (Barrett, 2017), anger mobilizes protest (Goodwin, Jasper, & Polletta, 2001), hope sustains long-term effort (Snyder, 2002), and solidarity binds fractured groups into agency (Durkheim, 1912/1995).
Example: A protest song may grieve injustice, channel anger, carry hope, and build solidarity all at once. Mechanistic coding would flatten this into "negative sentiment." A grief-aware lens recognizes its systemic potency across registers.

2. Depth of Grievance
Signals are situated at different system layers. Personal grief (viral testimonies) calls for immediate supports; communal grief (protests, vigils) signals institutional strain; historical grief (colonization, dispossession) demands reparative policy; ecological grief (species extinction) points to planetary-scale adaptation (Cunsolo & Ellis, 2018).
Example: An Indigenous water protector mourning a river's destruction articulates a kinship rupture with systemic implications for governance and design (Kimmerer, 2013).

3. Reach
Both scale and network centrality matter. A small vigil may have low numerical reach but high symbolic weight. A viral hashtag may reach millions but fade quickly.
Example: #BlackLivesMatter began as localized grief but resonated globally due to its justice framing (Clayton, 2018).

4. Resonance
Some signals fade; others embed as cultural anchors. Recurring rituals, chants, or remembrances make grief durable (Assmann, 2011).
Example: "Never Again" after school shootings became a persistent rallying cry, influencing public debate beyond initial grief.

5. Equity Lens
As Butler (2004) notes, not all lives are equally grievable. Coding asks: whose grief is visible, whose is silenced, and what legitimacy risks this creates.
Example: Shelter workers' grief over overdoses rarely appeared in metrics, yet their unprocessed trauma drove burnout and turnover.

6. Worldview and Metaphor
Lakoff & Johnson (1980) show metaphors shape cognition. Mechanistic metaphors ("throughput," "repair") frame grief as malfunction; biological or relational metaphors ("cycle," "kinship") frame it as renewal.
Example: Seeing forests as "resources" legitimizes extraction; as "relatives," stewardship (Whyte, 2018).

7. Temporal Focus
Signals orient toward past (colonial harms), present (pandemic losses), or anticipatory grief (climate collapse, AI displacement) (Poli, 2010; Miller, 2018).
Example: Climate marches often carry all three at once: grief for past inaction, present disasters, and feared future collapse.

8. Multispecies Signals
Indigenous worldviews extend grief to rivers, forests, animals. Ecological grief is a systemic warning at planetary scale (Kimmerer, 2013).
Example: The Whanganui River's legal personhood in New Zealand reflects grief metabolized into law (Charpleix, 2018).

5.4 Cultural Signal Framing (CSF)

How I arrived here and why it might matter

Cultural Signal Framing began as a small protest. I kept watching rich, contradictory feelings get compressed into like counts or a single sentiment score. That simplification felt fast and elegant, yet it often misled practice. I wanted a compact way to **keep texture**

and still **produce evidence** that a team could act on. CSF is my attempt to do that. It is qualitative first, structured enough to be taught, and modest enough to be audited. I borrow from thematic analysis and content analysis so different coders could agree on what they see, and I draw on systems and futures thinking because feedback and narrative shape how institutions learn (Braun & Clarke, 2006; Krippendorff, 2013; Meadows, 2008; Inayatullah, 1998; Lakoff & Johnson, 1980/2003).

What I mean by a "signal"

In this chapter a **signal** is any **observable trace of change** that could matter for design, policy, or governance. A good signal would be recognizable to more than one observer, repeatable across time or venues, and directional in that it seems to be moving rather than drifting. I look in five places:

- **Language:** phrases, metaphors, testimonies, satire.
- **Behavior:** vigils, walkouts, collective pauses, help-seeking.
- **Material:** memorial objects, quiet rooms, improvised workarounds.
- **Biological:** ethically aggregated rhythm and load indicators such as self-reported sleep disruption or circadian misfit in shift logs.
- **Wider-than-human:** stewardship rituals, seasonal absences in community species notes, land and water observations (Kimmerer, 2013; Whyte, 2018).

Most signals are **mixed-emotion**. Grief often arrives braided with anger, hope, and solidarity. That mix seems to matter for what happens next. Anger with no solidarity might burn quickly. Grief with hope often sustains. Solidarity can keep anger from hardening into blame (Bonanno, 2009; Goodwin, Jasper, & Polletta, 2001).

The CSF codebook

I keep Cultural Signal Framing simple and teachable. Each signal is coded along **seven dimensions** that, in my experience, would reliably change design choices. I score where scoring helps and I write a one-line note when nuance matters more than numbers.

Shared scale I use when relevant.
0 = absent • 1 = faint • 2 = salient • 3 = dominant
Co-present emotions or features are expected. I code each separately rather than collapsing them.

1) Emotion profile

What I code. I score **grief, anger, hope, solidarity separately** on 0–3.
Anchors I use.

- 0 absent: no trace in words, tone, or artefact.
- 1 faint: hinted or indirect.
- 2 salient: explicit in several units.
- 3 dominant: central theme, repeated across units and venues.
  Why this could help. The **mix** hints at fit-for-purpose support. **High grief + moderate hope** might suit acknowledgment and consolidation. **High anger + low solidarity** might call for accountability routes before new commitments. This aligns with research on emotion blends in collective action (Bonanno, 2009; Goodwin, Jasper, & Polletta, 2001).
  What I write down. Four numbers and a one-line gloss, e.g., "G2 A1 H1 S2, grief with steady solidarity."
  Design prompt. If grief ≥2, I might add recognition and cadence. If anger ≥2 and solidarity ≤1, I might open safe accountability channels.

2) Depth of grievance

What I code. The **register** implicated: **personal, communal, historical, ecological**. Multiple may apply; I mark a primary and any secondary.
Heuristics.

- *Personal:* "I," "my shift," individual loss or overload.
- *Communal:* "we," team, neighborhood, union, clan.
- *Historical:* references to long injustice, intergenerational harm, policy lineage.
- *Ecological:* land, waters, species, stewardship duties.
  Why this could help. Depth suggests the **level of intervention**. Personal may need local supports. Historical or ecological almost always implies policy, rights, and repair.
  What I write down. "Depth: communal>historical."
  Design prompt. If historical is present, I might pair ritual with material repair and a timeline.

3) Reach and resonance

What I code. Persistence over time, **echo** across venues, and **variation** in form.
Light index I use. Resonance = frequency × persistence × venue-spread on 0–3 each, noted as a quick proxy.
Why this could help. A small motif that **keeps returning** is often a better early indicator than a viral spike. Venue migration from lifestyle pages to policy desks, or from Slack side-channels to all-hands, often precedes institutional change.
What I write down. "Resonance 7/9; motif repeats across two months; moved from team chat to town hall."
Design prompt. High resonance with stalled outcomes might mean missing bridges to policy or leadership.

4) Equity of recognition

What I code. Whose losses are legitimized and whose are dismissed. I compare leadership channels, frontline sources, contractor voices, language communities, and off-platform spaces.
Cues. Who is named, who is thanked, who is allowed to pause, whose stories get official artifacts.
Why this could help. Uneven **grievability** is not only unfair; it is a **legitimacy and stability risk** (Butler, 2004).
What I write down. "Exec grief formalized; contractor grief invisible. Equity gap: high."
Design prompt. Close the gap: extend recognition entitlements and voice to the least powerful roles first.

5) Temporal focus

What I code. Whether the signal faces **past harms**, **present burdens**, or **anticipatory loss**. I often tally a simple ratio across a corpus.
Why this could help. Sequencing depends on clocks.

- Past implies **repair** and memorial.
- Present implies **relief** and pacing.
- Anticipatory implies **prevention** and buffering.
  What I write down. "Temporal stack P:R:F = 3:5:2. Present heavy."
  Design prompt. If anticipatory is rising, I might invest in buffers and opt-out check-ins around likely thresholds.

6) Metaphor family

What I code. Dominant frames: **mechanistic** (pipeline, throughput, target, war room) versus **relational/ecological** (cycle, season, kinship, garden, regeneration). I note verbatim phrases.
Why this could help. Metaphors channel attention and reward. Pipelines tend to produce throughput tactics; seasons tend to legitimize buffers, pruning, and rest (Lakoff & Johnson, 1980/2003).
What I write down. "Metaphors: pipeline, target, sprint; candidate reframes: season, maintenance, kin."
Design prompt. Test a reframe in one artifact, for example a "maintenance" tile beside throughput, and watch whether cadence behaviors change.

7) Wider-than-human register

What I code. Ties to **land, waters, non-human kin, stewardship law**, or ecological grief.
Cues. River names, species mentions, seasonal rituals, "Land Back," legal personhood of nature, circadian fit.
Why this could help. These signals point to **governance and rights**, not just aesthetics. They also reveal cadence constraints that come from ecology.
What I write down. "WTH present: watershed ritual; request for rest days during spawning season."
Design prompt. Bring stewards into rule-making; align schedules with seasonal care where feasible.

Putting it together on one card

For each unit I fill a short line:

Unit 14 | G2 A1 H1 S2 | Depth: communal>historical | Resonance 7/9 | Equity gap: medium (contractors) | Time: present>past | Metaphors: pipeline, sprint | WTH: none | **Gloss:** "We never stop" with monthly locker pins.

That one line is enough to brief a cross-functional team and to link to the **Impact Ladder** and **MINDSPACE** moves.

Common confusions and how I would resolve them

- **High anger or grief, low volume.** Check **resonance** and **equity of recognition**. Quiet channels often carry the early signal.
- **Multiple depths.** Mark both, order them, and choose interventions for the **highest** implicated level.
- **Metaphor blends.** Note the blend and test one reframe at a time so changes are attributable.
- **Anticipatory grief vs anxiety.** If the signal names **foreclosed futures** tied to concrete thresholds, I code anticipatory grief; diffuse worry without an object I leave as anxiety.

Methodological Safeguards

Signals were not treated as isolated datapoints but as part of a living archive. Reflexive practice (Kolb, 1984; Gibbs, 1988) required me to ask: whose grief was most visible to me, whose was easier to code, whose was missing? To mitigate bias, I drew on Spradley's (1980) ethnographic frameworks, coding domains and cultural themes to ensure Indigenous, non-Western, and multispecies signals were not erased.

Example: A mechanistic lens might code Māori tangihanga or Japanese Obon as "gatherings." A grief-informed lens recognizes them as infrastructures of continuity.

B. The Impact Ladder: Translating Signals into Systemic Outcomes

Signals alone are insufficient. Institutions need to know **where grief is in its systemic journey** is it being ignored, ritualized, institutionalized, or embedded into continuity? To meet this need, I developed the **Impact Ladder**, synthesizing systems theory (Meadows, 2008), foresight methods (Inayatullah, 1998; Sharpe et al., 2016), behavioral economics (Thaler & Sunstein, 2008; Dolan et al., 2010), cultural memory (Assmann, 2011), and Indigenous perspectives (Kimmerer, 2013)

Levels of the Impact Ladder

- **I0 – Awareness:** Grief enters discourse via hashtags, headlines, or memorials. Necessary but superficial (McCombs & Shaw, 1972).

- **I1 – Micro-Behavior:** Individuals light candles, donate, or share posts. Early indicators, fragile unless institutionalized (Thaler & Sunstein, 2008).
- **I2 – Local Practice:** Teams or communities embed rituals—closure circles, vigils, cultural festivals. Grief becomes social infrastructure (Assmann, 2011).
- **I3 – Institutional Change:** Policies and protocols emerge: bereavement leave, remembrance spaces. Grief shifts from anomaly to structural condition (Shear, 2015).
- **I4 – Structural Reform:** Laws, reparations, or TRCs embed grief into governance, stabilizing legitimacy (Hayner, 2011).
- **I5 – Narrative Shift:** Dominant metaphors change, reshaping cultural common sense (Lakoff & Johnson, 1980; Inayatullah, 1998).
- **I6 – Ecological Outcomes:** Grief metabolized into multispecies continuity—legal rights for rivers, biodiversity recovery (Cunsolo & Ellis, 2018; Charpleix, 2018).

Heuristic for Analysis

Impact = **Signal Strength × Institutional Fit × Time**

- *Signal strength:* emotional potency (Barrett, 2017).
- *Institutional fit:* openness to recognition (Kingdon, 1995).
- *Time:* grief unfolds across short protests and long arcs of reform (Tarrow, 2011).

Why It Matters

- **For policy:** Identifies when grief requires symbolic acknowledgment (I0–I2) versus structural reform (I3–I5).
- **For business:** Reveals hidden costs of misrecognition (turnover, disengagement) and opportunities for cultural resilience.
- **For design:** Treats grief as design material, informing rituals, spaces, and metaphors that support continuity.
- **For AI:** Warns against algorithmic erasure of grief as "negative sentiment," advocating grief-aware protocols.
- **For Indigenous and ecological futures:** Validates grief as multispecies infrastructure.

From this analysis, I conclude: **grief is a systemic multiplier.** Its recognition (or denial) at different rungs changes whether systems fracture under loss or metabolize it into resilience. For futures practice, the task is to build mechanisms—policies, rituals, spaces,

metrics, AI guardrails—that help grief move upward on the ladder, from private pain to collective renewal.

APPENDIX: FRAMEWORK EXAMPLES

Case Example 3: Foresight – Anticipating Ecological Grief

Context: A national foresight unit explores the impacts of climate change on coastal communities. Technical models exist, but adoption of adaptation policies stalls.

Applying the Framework:

- **Identify:** Signal mapping highlights grief in local songs, memorials to eroded coastlines, and rituals for lost fisheries.
- **Trace Causes:** Causes include sea-level rise, declining species, and policies that frame adaptation as cost rather than continuity.
- **Impacts:** Impact ladders show cascading outcomes: community displacement → job loss → erosion of cultural identity → political unrest.
- **Rhythm:** Seasonal rituals already exist (festivals tied to fishing) but have lost support.
- **Attachments:** Communities want to retain traditions and kinship with water while letting go of unsustainable practices.
- **Narratives:** Dominant metaphor: “fighting nature” rather than “living with water.”
- **Leverage:** Quick win: fund community-led rituals that tie adaptation to continuity. Strategic bet: reframe adaptation policy as cultural preservation, not just infrastructure defense.

Result: Policy adoption improves because strategies now resonate with lived grief and cultural continuity. They can measure continuity through pulse surveys that track recognition and belonging. These moves begin to shift culture and practice.