Another _____ is Possible

A Glossary for Other Worlds

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A GLOSSARY FOR OTHER WORLDS

Another _____ is Possible

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Executive Summary

This Glossary need not be read in full. Even when read modularly, it aims to support public servants who need better ways to analyse, design policies for, and respond to complex problems.

Its practical value is simple: when familiar language is too narrow, the entries offer fresh concepts for asking sharper questions about policy design, implementation, engagement, crisis response, institutional learning, and service delivery. These concepts are grounded in concrete examples, case studies, and references — including adaptive regulation, public health, renewable energy, and more — for readers to draw on, cite, and adapt. Each entry also begins with an overview and guiding questions, to highlight its relevance to the public service and invite practical reflection.

In times of uncertainty, another way of thinking, working, and living together is possible — and necessary. There may be a tendency to default to familiarity, urgency, control, pessimism, optimisation, and risk avoidance. These instincts have their place, but they can also narrow both imagination and analysis. The entries in this Glossary invite readers to pause before familiar instincts harden, and to ask how else things can be understood and acted upon.

To make these ideas easier to navigate, the fifteen entries are organised around three broad clusters. **Another Lens is Possible** is about seeing issues differently. "Trite Pessimism" asks when realism has hardened into reflexive cynicism; "Epistemic Humility" asks what our models, categories, and worldviews may not see; "Pluriverse" asks whose definition of a good outcome is being used; and "Jainism's Three Jewels" asks how care, restraint, and many-sidedness can help us approach complex trade-offs holistically.

Another System is Possible is about designing for change, resilience, and dignity. "Thermostatic Governance" asks how policies can adjust when conditions change; "Virtuous Cycles" asks how small interventions can compound into wider change; and "Graceful Degradation" asks how systems can lose capacity without collapsing. "Andante" asks how the pace of change can fit the people and systems expected to move with it; "Kapwa" reminds us that people are embedded in families, neighbourhoods, and other networks of relationship; and "Affective Crisis Response" asks how trust, grief, fear, and anger shape responses to difficult situations.

Another Way of Working is Possible is about moving with what exists and what resists. "Sidecasting" asks what can be done with what we already have; "Merantau" asks how people and ideas change as they travel across countries, contexts, and communities; and "The Philosophy of Subtraction" asks what should be removed to make space for, or bring greater clarity to, what matters. "Generative Friction" asks when disagreement or resistance is not merely a problem, but a signal that something important needs to be understood; and "Argument for the Sake of Heaven" asks how disagreement can be essential and how it might be better met for better judgement.

We hope this Glossary will help you reframe familiar challenges, offer new insights, and bring practical value as you go about working to make lives better.

What This Glossary Is For

In conjunction with the Centre for Strategic Futures' 15th anniversary in 2024, the Centre organised Foresight Conference 2024 with the theme of "A Season for Brave Ideas: Another Paradigm is Possible." Under it were three sub-themes: "Another Architecture is Possible", "Another Belonging is Possible", and "Another Coexistence is Possible." Intentionally, the conference was to explore different and better ways of working and living together.

That desire came in the context of 2024, the year the conference happened, being particularly volatile. After all, it was the year of elections: across 64 countries, 4 billion eligible voters—nearly half the world's population—had gone to the polls. In these elections, over 80 percent of incumbents lost their seats or were unseated, a clear display of voters' discontent towards the governments of their day. Since then, in 2025 and likely beyond, volatility remains part of the furniture of the foreseeable future.

We conceived our conference as a way to focus on imagination and hope in an environment where pessimism and gloom appeared to be a default. With fires always to put out, with peril always around the corner, imagining the future to be better can often feel impossible. We should, however, remember that we do not need to wait for a good time to think of better futures, and that "better" does not mean wishful. To think well of better futures is a tide that lifts all boats in times of both thriving and hardship.

In that spirit, this report aims to be a refreshing read. It aims to protect psychic space to dream, think, and act well. As futurists, we take as gospel that the future is not set in stone. It is in that malleability that multiple futures exist, and we give shape to them through our actions today. There is a fundamental difference between what is, what can be, and what ought to be. Another vector is possible.

A conference cannot save the world, but we think there were ideas in our gathering worth remembering. This report is a glossary indexing those ideas; take from and make of them as you will. Some of them might strike you as fanciful, irrelevant even, but we offer them as starting points. Or, to echo Friedman, consider the ideas here as thoughts nearby, which even if ignored now are within reach and ready for use when crises occur. Share the ideas with people you love. Maybe even share them with people you hate.

Ideas alone cannot change realities. They need us to act on them. Just as microscopic fungi—their branching hyphae thinner than human hair—are right now regulating the Earth's climate as they decompose fallen leaves, actions large and small are connected and matter. From whatever positions of influence and interdependence you occupy, we encourage you to guide your ideas towards maturity and fruition: nurture them in your mind, translate them into practice, and use them as a pivot to sidestep mental impasse. We hope for this glossary to be a living document that supports ongoing action and serious play, working towards a world where another architecture, belonging, and coexistence are not only possible but also true.

With Courage,
Your Friends at CSF

How This Glossary Was Made

In 2024, the Centre for Strategic Futures organised a two-day Foresight Conference with the theme of "A Season for Brave Ideas: Another Paradigm is Possible." Under it were three sub-themes: "Another Architecture is Possible", "Another Belonging is Possible", and "Another Coexistence is Possible."

In our two days together, our group of around 50 participants wondered what else might be possible through a series of keynotes and conversations. Participants decided what topics they wanted to explore, and led and shaped their own discussions. They were supported by our sherpas, volunteers from across the Public Service, who shapeshifted organically across the unique roles each discussion might need: from facilitator, note-taker, provocateur, and so on.

The conference was the beginning of the process that led us to this glossary. As the closing activity for the event, we asked our participants to propose entries for a glossary of ideas they collectively believed were worth considering or doing more. Those proto-entries helped to organise and prioritise what was raised across the sprawl of discussions that happened. By the end of the conference, five groups of participants proposed just under 50 entries for the glossary.

After the conference, CSF took several months working on a curated and editorialised version of the glossary. We aimed for a set of entries that were representative (of the discussions held) and comprehensive (in the range of things they covered), entries which could serve to guide the Centre's research and writing in time to come.

The result of that is what you now see: a glossary of 15 terms, each with a writeup that expands on what each term means, looks like, and can be. A not-so-secret 16th entry, "lostalgia", forms the foreword by articulating our starting point: that old ideas of the future continue to have a strong grip on the present, making it difficult to imagine otherwise.

We offer this book of essays, with gratitude, to our participants:

Crystal Abidin
Benjamin Cashore
Chen Qiufan
Joshua Comaroff
Clara Yun Fontaine
Yvonne Gao
Marc Ho Zheng Jie
Peter Ho
Melody Hong
Hwang Yu-Ning
Adam Kahane
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Hannah Kim
Jeanette Kwek
Beryl Pong
Ora-Orn Poocharoen
George Radics
Peter Schwartz
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Corrie Tan
Gene Tan
Henry Tan
Martin Tan
Tan Suet Ferng
Vaughn Tan
Adam Tooze
Dawn Yip
Evan A. Laksmana
Lim Pei Shan
Lim Sun Sun
Joseph Liow
Jean Liu
Ken Liu
Shawn Loh
Christina Lu
Aaron Maniam
Ravi Menon
Aya Miyaguchi
Mohamed Imran
Shruti Pandalai

And to our conference sherpas:

Angel Chew
Shawn Chua
Sharmini Johnson
Vernie Oliviero
Liana Tang

Lostalgia— On the Futures That Never Arrived

We live in a moment unusually burdened by its own sense of time. Many of the images that once organised our imagination of the future—technologies, lifestyles, political horizons—now feel strangely inert. Our Conference participants found a term for this shade of feeling: *lostalgia*. It is a nostalgia not for the past but for lost futures: the ones we were promised yet never received, or which, when they arrived, proved far from the panaceas they claimed to be.

How did we get here?

Throughout the twentieth century, societies lived inside what Reinhart Koselleck called a widening "horizon of expectation", the belief that the future would look radically different from the past. That horizon was sustained by familiar images of progress: flying cars, miracle medicines, moon colonies, a world made orderly by science and engineering. These visions rarely arrived, yet they linger and feel evermore immanent. They form what Koselleck called future pasts: futures once credible enough to organise hope, now stranded by history, but still shaping our imagination.

Another failure is also at work: the difficulty of generating new futures. In what Mark Fisher termed the "slow cancellation of the future", recent decades have seen culture looping back onto past styles. He remarked that to live in the twenty-first century is to "have twentieth-century culture on high-definition screens." Time seems stuck. As if experiencing anterograde amnesia, we remember only the past futures we lost but struggle to encode new ones we might still create. As Niklas Luhmann puts it, "the future cannot begin."

This paralysis is deepened by our own technologies of prediction. As Sun-Ha Hong argues, contemporary systems of forecasting—from data analytics to AI—often give us the form of futurity without its substance. In churning prediction without futures, they flood us with probabilities and dashboards while narrowing the range of what feels possible. Optimisation crowds out imagination. We are saturated by frameworks and models, yet starved of meaningful horizons.

Meanwhile, many realised futures have revealed their uneven costs. The Apollo moonshot captured imaginations even as the Vietnam War burned. Hydroelectric megadams—Aswan, Hoover, Three Gorges—displayed engineering prowess while drowning villages and ecosystems. Medical breakthroughs were built on bodies that did not consent: Black men deceived in Tuskegee, poor women subjected to contraceptive trials in Puerto Rico. We might remember that the original Mechanical Turk, an 18th-century chess automaton which captured the imagination of the day, was not a machine at all, but a cramped human operator hidden beneath gears and levers. Its story has become uncomfortably relevant again.

These contradictions remind us that no future is singular. Gains for some have meant harms for others. Technologies sold as salvation have often concealed the true cost of their making. And whenever we speak of a shared future—a "we"—it is worth asking who is included in that pronoun, and who is placed beneath the table that makes the illusion possible.

Recognising and naming this sentiment—lostalgia—does not mean abandoning the pursuit of better worlds. Instead, we ask ourselves to release inherited futures that no longer serve us, and to examine the debris they have left behind. We also ask ourselves to seek the good futures and good practices still to be had, in today's context, for today's needs. They may not resemble the grand utopias once promised, but they suggest paths forward for which the grounds are already laid.

This book gathers alternative ways of thinking about the world: vocabularies, frameworks, and perspectives that resist lostalgia and help us re-enter time differently. Let us make space for what else is possible.

LANGUAGE English

PROVENANCE Cultural criticism; ecofeminist writing; social theories on political imagination

[1]

Trite Pessimism

At a Glance

Trite Pessimism asks the Public Service to distinguish clear-eyed realism from reflexive cynicism. For Singapore, this could mean looking at where officers, agencies, or stakeholders have become accustomed to saying that something "cannot be done", "will never work", or "is too difficult", without testing whether that judgement comes from evidence, institutional habit, risk aversion, fatigue, or inherited assumptions. It cautions us against path dependency thinking, and risk-averse optimisation mindsets.

This is especially relevant for cross-agency problems, social innovation, citizen engagement, long-term planning, and work involving vulnerable groups, where repeated disappointment can make ambition feel naïve. The point is not to be optimistic for its own sake, but to keep practical imagination alive.

Guiding Questions

- What pessimistic assumptions or past failures are we treating as facts?
- Where can we build imagination phases before solutioning?
- What existing examples, locally or elsewhere, show that another approach is already possible?

During the Blitz, Londoners spent long nights in Underground stations. Shelter communities organised small forms of entertainment, including some who brought their gramophone to play music for others.

Is it possible to become bored with hopelessness? In his essay "Despair Fatigue", David Graeber described how despair had become so commonplace within British politics and the cultural left. Becoming its own genre, the expression of despair had become stylised as rage in punk, irony in satire, and resignation in commentary.

This posture was difficult to sustain. Eventually, people were exhausted not by politics, but by exhaustion itself. This exhaustion was with trite pessimism. Akin to calcified despair, trite pessimism is neither the deep mourning of tragedy nor the clear-eyed realism of someone seeing the world in full. Rather, it is a performance of world-weariness that masks a deeper disavowal of responsibility and imagination. It is a style of noncommittal critique that tells us the world is broken, and that hope is naive. Despair, repeated mindlessly, is lame and boring.

Where is trite pessimism from?

Trite pessimism has several origin stories. David Graeber suggests one starting point, which he outlines in his essay "Despair Fatigue." In the wake of the 2008 financial crisis, Britain made deep cuts in public funding and enacted sweeping austerity measures. These cuts were justified by the claim that the recession had been caused by excessive government debt.

The narrative was false. The crisis had in fact been triggered by the private financial system—speculation, predatory lending for subprime mortgages, and deficiencies in regulation—but was later reframed as a crisis of public irresponsibility. Nevertheless, the Conservative Party, then in coalition with the Liberal Democrats, framed austerity as a necessary jolt of belt-tightening realism, which all responsible citizens should morally accept. Mainstream media, from tabloids like the Daily Mail to the BBC, echoed the sentiment and made it a consensus across party lines.

Against this national narrative, protestors were portrayed as disruptors who were unserious or out of touch. When groups like Disabled People Against Cuts protested against the termination of the Independent Living Fund, they were regularly met with police violence and public disapprobation. In this climate, recurring pessimism became a coping mechanism. If austerity measures were inevitable or even moral, then resistance must be a fool's errand. Better then to retreat into knowing cynicism or ironic detachment.

Another form of trite pessimism came from academia. Literary scholar Christopher Castiglia coined the term "critiquiness" to describe a posture: that of mimicking the forms of critical thought without its substance. Critiquiness is the belief that pointing out what is wrong is sufficient; that negativity, by itself, is a sign of intellectual maturity, as if the mark of intelligence is guaranteed to those who dismantle rather than imagine.

According to Castiglia, critiquiness grew in literary and cultural studies after 1968. The year 1968 saw a wave of global uprisings: student protests in Paris, Berlin, Mexico City, and Berkeley; anti-colonial revolts across Africa and Asia; and the intensification of the civil rights and antiwar movements in the U.S. Often, students and intellectuals were not just critics but protagonists of insurgency, demanding both political change and the transformation of cultural institutions, including the university.

In response to these upheavals, universities in the global North—especially in the humanities and social sciences—began integrating critical theory into their curricula. Thinkers like Foucault, Derrida, and the Frankfurt School were institutionalised, often through new departments of cultural studies, gender studies, and postcolonial theory. But as these critiques were absorbed into tenure systems and citation economies, their oppositional force was dulled. Critique became a credential: a way of demonstrating mastery through deconstruction and disagreement, rather than commitment to imagining or building something else.

This shift towards critique laid the groundwork for critiquiness: a stylised detachment that mistakes negation for insight. Castiglia notes how this stance is often rewarded institutionally, through how the most jaded voice is often made to sound the smartest. On top of being an epistemic failure, critiquiness flattens the range of emotion available to criticism into cynicism.

Trite ideas feed trite pessimism

How did hope, imagination, and optimism come to be derided as unserious, inconsequential, and naive?

Trite pessimism feeds off trite ideas, intellectual clichés which despite being empirically discredited continue to shape our sense of what is real and realistic. One such cliché is that human nature is inherently selfish and bad, as per philosopher Thomas Hobbes' description of life outside the bounds of sovereign authority to be "nasty, brutish, and short." This image of chaos lurking right on the edge of order is used as easy justification for strong states, coercive institutions, and elite control.

However, Rebecca Solnit's "A Paradise Built in Hell" tells another story. Drawing on firsthand accounts of disasters, Solnit documents how ordinary people routinely act with competence, creativity, and care in crisis, even in the absence of formal authority. After the 1906 San Francisco earthquake which destroyed over 80% of the city, residents organised impromptu soup kitchens in public parks. After the 1985 Mexico City earthquake which cost up to US$5 billion in damages,

neighbours mobilised search-and-rescue operations when the government refused to act. During Hurricane Katrina, the Common Ground Collective, a grassroots relief effort, delivered food, medicine, and sanitation to communities abandoned by the state.

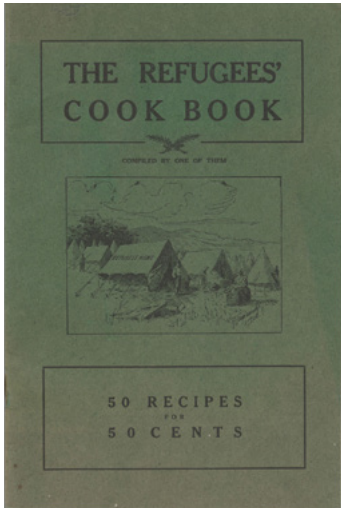
Through such accounts, Solnit challenges the totalising assumption that people crumble when institutions fail. Going further, Solnit shows the opposite: that it is often not ordinary citizens but elites who panic. In the aftermath of Hurricane Katrina, the U.S. media circulated unverified stories of looting, rape, and violence in the Superdome, and these reports were used to justify deploying the National Guard. The accounts were later proven false. Solnit calls such blunders "elite panic", a tendency of those in power to assume the worst of those below, and respond in extremes they deem warranted given their false assumptions.

Hobbes assumes people to be selfish until reined in by force. Solnit's archive of disaster responses suggests otherwise. Although our media and political imagination are habituated to imagine rupture and pathology, goodness, too, is a recurring pattern.

A related cliché is that of the "tragedy of the commons", popularised by biologist Garrett Hardin in his 1968 essay of the same title. Hardin argued that individuals acting in rational self-interest would inevitably overuse and degrade shared resources, unless those resources were either privatised or tightly regulated by the state. His metaphor took on a life of its own, becoming a secular parable widely cited in economics, policy, and environmental science.

Except "tragedy of the commons" was only a thought experiment. The doomed pasture in Hardin's paper was imagined. Hardin himself acknowledged it as an abstraction—a "theoretical construct"—and not a field-based study of how communities manage resources. If there ever was a counter to those who deem imagination inconsequential, Hardin's fabulation-turned-truism is it.

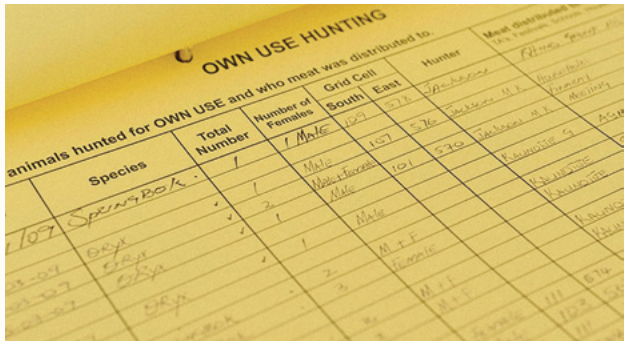
In practice, the commons is a far cry from Hardin's imagination. Case studies by political economist Elinor Ostrom show how. In Bali, traditional subak irrigation has been maintained for centuries through cooperative water-sharing among rice farmers. In Switzerland, alpine herders use rotational grazing and maintain collective rules to preserve pasturelands. In the Philippines, local fisheries enforce their own no-catch zones to allow fish stocks to regenerate. In Kenya and Nepal, forest users manage woodland resources based on community-based monitoring, flexible sanctions, and seasonal rotation. Commentators have since called Ostrom's findings the "miracle of the commons."



The cover of *The Refugees' Cook Book*, compiled by San Francisco earthquake survivors in 1906 and sold for 50 cents to benefit those who lost their cookbooks in the disaster.

Ostrom did write that self-governance was never a guarantee, as commons do break down. But her accounts do insist that tragedy is not the only available genre. While thought experiments such as Hardin's can contain grains of truth—Ostrom herself documented how commons fail—we should refrain from turning his conclusion into the unassailable axiom it was never meant to be.

When we keep retelling the same story about self-interest, depletion, and collapse, we foreclose the



Handwritten wildlife survey logs from Namibia's communal conservancies record species counts and sightings gathered by local game guards. These records reflect a system where communities manage wildlife on their land, set hunting quotas with the state, and share benefits from conservation and tourism.

Bali's Subak irrigation system, a community-managed network of terraces, canals, and cooperative water sharing, has supported rice farming since the late first millennium.

possibility of learning from what actually works. Doing so is to everyone's detriment. We shortchange ourselves and others on at least two fronts: on how much potential for good there is, and how much autonomy we have.

Optimism, properly understood

If trite pessimism reigns, it might be because optimism has become degraded by its parodies. For example, Lauren Berlant cautions against "cruel optimism", which is the kind of attachment to fantasies that prevents us from acting meaningfully.

Still, it would be a shame to succumb to the false binary of optimism or pessimism, hope or despair, action or inaction. There are robust third options to consider.

Castiglia himself coined the term critiquiness to distinguish it from critique properly understood. He reminds us that critique was once deeply entangled with world-making, especially in the decades following the civil rights, feminist, queer, and anti-colonial movements of the

1960s–80s. Critical theory then was not just about dismantling dominant ideologies, but about imagining and constructing alternatives to the monolith. Critique was both diagnostic and visionary.

Hope should also be properly understood and practiced. In "Hope in the Dark", Solnit writes that "perfection is a stick with which to beat the possible." To wait for morally pure actors or causes before acting is to wait forever.

Alexis Shotwell's "Against Purity" aims to sidestep that paralysis. Writing at the intersection of feminist theory, environmental justice, and disability politics, Shotwell tracks how the demand for purity—of identity, motive, or means—has repeatedly sabotaged coalition and undermined political action.

By making action contingent on moral cleanliness, purity politics avoids the difficult work of navigating complexity. Shotwell reminds us that there is no clean break from history or complicity, and so there is no primordial Eden to return to. To hope is to confront what is provisional, flawed, and damaged, and proceed anyway.

Lastly, it would be a mistake to assume that optimism and critique can never be allied. Anton Ego, the food critic and nemesis in Pixar's Ratatouille, demonstrates how. Near the end of the film, Ego was so floored by food made by a rat that he was forced to agree with a motto he had long disdained: anyone can cook. He would eventually publish a glowing review—and then be fired for promoting a "rat-infested" restaurant.

Having put himself at stake, Ego reflected on what the work of a critic is. "In many ways," he says, "the work of a critic is easy. We thrive on negative criticism, which is fun to write and to read." But Ego identifies a moment when the critic truly risks something: when mounting a fierce defence of the new, radiant, and ill-understood.

"The world is often unkind to new talent, new creations", says Ego.

"The new needs friends."

LANGUAGE English

PROVENANCE Phenomenology; contemporary moral psychology and cross-cultural inquiry

[2]

Epistemic Humility

At a Glance

Epistemic humility asks the Public Service to treat lived experience, professional expertise, frontline knowledge, and unfamiliar worldviews as forms of intelligence rather than as noise to be translated away. For Singapore, this could mean looking more carefully at what residents, frontline officers, social workers, teachers, healthcare workers, enforcement officers, businesses, voluntary organisations, and community leaders know before an issue is treated as fully understood.

This is especially important for problems involving trust, stigma, non-take-up of schemes, family stress, caregiving, mental health, digital exclusion, community safety, or public compliance, where behaviour may not match official assumptions.

Guiding Questions

- What does the dashboard not show?
- What do frontline officers keep saying informally that has not entered the policy frame?
- Which groups appear "hard to reach" because our channels, categories, or assumptions are wrong?

This ultraviolet image of a flower reveals patterns invisible to humans. Bees perceive these markings within their *umwelt*—their sensory world—helping them locate pollen and nectar for effective pollination.

Epistemic humility is a posture for encountering knowledge we find foreign, be it in how other disciplines operate or how others understand, value, and lead their lives, without rushing to translate it into our own terms.

In such efforts, we often hear talk of "lived experience", "embodied experience", or "tacit knowledge", terms suggesting that a certain universe of knowledge resides within the body, through what it does or undergoes every day. But what does "lived experience" actually mean?

The Subjective Architecture of Knowledge

The term "lived experience" translates the German *Erlebnis*, rooted in *leben*, meaning "life." It signifies experience that is not a finished accumulation but immediate, ongoing, and alive. Erlebnis is the raw material of daily life—experiences that have not yet been organised, reflected upon, or solidified into established understanding.

Erlebnis was not widely used until the 1870s, when Wilhelm Dilthey introduced it into academic discourse. Rejecting the idea that the best data must be objective, rational, and detached, he argued that erlebnis—the inner realm of subjective experience—deserved complementary respect. There is a difference between knowing how taste receptors work and being soothed by a warm bowl of soup; between understanding the biochemistry of love and feeling the fullness of eating with people we love. Erlebnis is the "view from the inside" that animates mechanical descriptions.

To understand political division in the United States, sociologist Arlie Hochschild travelled into the heart of a Republican "red state" to learn directly from voters unlike herself. She focused her research around Lake Charles, Louisiana, where bayous polluted by industrial waste destroyed local food sources and made residents sick. At the heart of this situation is what Hochschild calls the "Great Paradox": states like Louisiana are among the poorest, sickest, and most polluted, heavily dependent on federal funds, yet often the most resistant to federal assistance and regulation. Why?

The answer, she argues, lies in a "deep story": a narrative that captures core feelings and makes sense of the world in ways that feel true and essential. In Louisiana, that deep story is one of waiting in line for decades, sometimes across generations, for the American Dream. People feel they have waited their turn through hard work, Christian values, and endurance.

But the line feels stalled. Looking ahead, they see others—Black people, women, immigrants, refugees, even the brown pelican symbolising environmentalists—cutting in line with help from the federal government. In fact, the very government meant to supervise the line appears to be assisting these line-cutters. Many Louisiana residents feel like strangers in their own land, alienated from the country they believe they built. In their deep story, honour is earned through self-reliance and hard work; accepting government handouts is shameful. Working for industry, however harmful, is at least dignifying.

Donald Trump might be a bully, but at least he fights the other bullies—and might finally make the line move. Louisiana residents have waited for a very long time.

The disability rights motto, "nothing about us, without us", is a reminder that primary stakeholders are often those least spoken to or heard. When technocratic tendencies creep in, erlebnis can anchor bureaucracies to lived and felt reality. The point is not to elevate erlebnis as the foundation of knowledge, but to remain conscious of

The Holy Rosary Cemetery in Taft, Louisiana, is situated adjacent to a Dow Chemical petrochemical complex. The image juxtaposes a local cemetery and sacred space against the industrial infrastructure of "Cancer Alley", a region heavily impacted by industrial pollution.

how powerfully it shapes what each of us takes to be true. Across our lives, it forms the subjective architecture of our assumptions.

Doubt and Discovery

What we hold true sometimes becomes what we deem sacred, as is the case in religion. Even then, we should remember that many religious tenets were forged in the crucible of doubt.

Abu Hamid al-Ghazali was a towering figure of Islamic thought, honoured by his contemporaries with the title "The Proof of Islam" (*Ḥujjat al-islām*). Born in 1056 in Tus, Persia (near present-day Mashhad, Iran), he rose rapidly as a preeminent scholar. In 1091, the powerful Seljuq vizier Nizam al-Mulk appointed him to a prestigious professorship at the Niẓāmiyya madrasa in Baghdad, then the intellectual heart of the Muslim world.

In 1095, al-Ghazali experienced a spiritual crisis. The Seljuq regime had descended into civil war, undermining his faith in the political order. At the same time, he grew increasingly disillusioned with scholastic philosophy and theology, which he felt had hardened into exercises in intellectual pride rather than genuine piety.

Deeply shaken, he abandoned his posts. After making arrangements for his family, he gave away his remaining wealth and embarked on a spiritual journey as a Sufi

ascetic. Wandering through Damascus, Jerusalem, and Mecca, he devoted himself to seclusion and retreat, seeking to purify his soul.

He sought divine love and knowledge through direct experience of God, following the path of the Sufi mystics. At the time, Sufism—the mystical and inward dimension of Islam—was often regarded with suspicion by the religious establishment. Mainstream orthodoxy, represented by scholars of Islamic law and scholastic theology, emphasised the external duties of the faith: legal rulings, ritual correctness, and the rational defence of creedal doctrine. By contrast, Sufism centred on the inner spiritual state of the believer, pursuing an experiential knowledge of God grounded in transformation and love.

A Persian miniature depicting "The Conference of the Birds", a Sufi poem narrating the spiritual journey of a group of birds searching for their sovereign, the Simorgh.

After over ten years of seclusion, al-Ghazali returned to complete The Revival of the Religious Sciences (*Iḥyā' 'ulūm al-dīn*). Its great accomplishment was to bring

orthodox Sunni theology, the legal requirements of the faith, and the deep, inward spirituality of Sufism together. For many, love of God had been impossible, because we cannot love that which is entirely beyond us, that which is transcendent. But for Ghazali, the outer path is connected to the inner path. As a concept associated with the *Revival* puts it: "Whoever knows himself, knows his Lord."

Humility and Compassion

One learns many things from Dr. Izzeldin Abuelaish, not least of which is how epistemic humility and compassion can endure under extreme pressure. Dr. Izzeldin Abuelaish, a Gaza-born doctor who worked in Israel, sits at the intersection of worlds that rarely speak to each other. Epistemic humility becomes clearest when someone has to navigate more than one world at once, and his example shows what it looks like to stay precise about what we know and who we blame, even when circumstances make that precision difficult.

Dr. Izzeldin Abuelaish grew up in the Jabalia refugee camp in Gaza. From a young age, he worked in close proximity with Israelis—first as a labourer on a moshav, and later, after medical training in Cairo, London, and Boston, he returned to practise as an obstetrician and gynaecologist in several Israeli hospitals. His daily routine involved crossing a border that could close without warning. And when it did open, he often found himself delayed or questioned by individual soldiers.

On December 27, 2008, during the 2008-2009 war, an Israeli tank shell struck his family home, killing three of his daughters—Bessan, Mayar, and Aya—and his niece, Noor. In the chaos that followed, his grief was broadcast live when he phoned a journalist friend moments after the explosion.

For many, such a loss following years of service would have hardened the heart. But as Dr. Abuelaish's longtime colleague recalls, Dr. Abuelaish was a man who was always "specific" in his anger. Whenever

humiliated at a border crossing, Dr. Abuelaish directed his frustration only at the particular officer responsible—not at "the Israelis" as a whole. "He behaved rudely because he did not understand", he reasoned. His anger remained directed at what happened and at those directly responsible, not at Israelis as a collective. In *I Shall Not Hate*, he writes about this as a conscious decision: he refused to let the actions of particular individuals turn into a conclusion about an entire people, many of whom he treated with respect and who responded in kind.

The discipline of attribution—refusing to turn personal tragedy into total condemnation—became a pillar of his public witness. Dr. Abuelaish's insistence on this point is admirable—and also difficult to contemplate today. His example reminds us that epistemic humility is possible. It does not mean looking away when harm is done. Because two wrongs do not make a right, epistemic humility requires holding fast to accuracy even when it hurts, and even when doing so feels beyond reach.

Children in the U.S. and Mexico play on the *Teeter-Totter Wall*, an installation created by architects Ronald Rael and Virginia San Fratello.

Coda

The writer and lay theologian G. K. Chesterton was known as the "prince of paradox." In his book Orthodoxy, he calls us to imagine an alien—"some mathematical creature"—examining a human body. The alien observes a pattern of twos: a left and right arm, a left and right leg, a left and right ear, and even twin lobes of the brain.

Ready to declare this a general law, the alien then seeks the heart. Upon locating one on the left, it expects to find another on the right—but finds nothing.

Chesterton concludes that the trouble with the world is not that it is unreasonable, or even reasonable, but that it is "nearly reasonable, but not quite." It looks mathematical and regular, but that is because "its exactitude is obvious" while "its inexactitude is hidden." As Chesterton says: "its wildness lies in wait."

This wildness—a wildness that threatens the stability of what we know and who we are—can come in many forms. It can be in the lived experiences of other people, the incommensurable knowledge-worlds of other disciplines, or the collective limits of our knowledge, our society, and our times.

We now have better language and frameworks for identifying, naming, and addressing this wildness. Whether we call it lived experience, erlebnis, or epistemic humility, these concepts all point to the same reminder: that our own life—our "deep story"—is but one of billions currently unfolding, in one slice of history, out of every possible moment.

Jeamin Cha's *Crushed or Unfolded* reworks results from the Clock Drawing Test, a common tool for detecting cognitive decline, although similar drawings can arise from depression or limited schooling. The work questions what assumptions we make as we measure and diagnose the mind.

[2] EPISTEMIC HUMILITY

LANGUAGE English

PROVENANCE Latin American decolonial thought; Indigenous cosmologies

[3]

Pluriverse

At a Glance

Pluriverse asks the Public Service to recognise that different communities may not only have different preferences, but different ways of understanding what a good life, fair outcome, or legitimate process looks like. For Singapore, this could mean looking more carefully at where standardised systems, national averages, or one-size-fits-all service models obscure different lifeworlds across age, income, ethnicity, religion, disability, caregiving role, housing type, or migration history.

This is especially relevant for policies involving community norms, land use, health, ageing, family life, social support, education, or environmental stewardship, where success may be defined differently by different groups.

Guiding Questions

- Whose definition of "good" is built into this policy?
- Where are we mistaking administrative consistency for lived fairness?
- How might we move from single solutions to designing a portfolio of pathways?

Pluriverse is a way of seeing the world as composed of many coexisting realities, each with its own truth and way of living. It resists the "monification" of the world: the tendency of institutions such as states, markets, science, and media to impose one vision of what is right and real.

Sociologist Martin Savransky reminds us that although modernity recast the world as if it was a single self-contained object, reality is not and has never been one-size-fits-all. Drawing from Indigenous cosmologies and Latin American critiques of modernity, thinkers like Arturo Escobar push for an ontological plurality where multiple worlds, each with their own logic and livelihood, can and do coexist.

A diagrammatic sketch based on art by Johnny Bulunbulun illustrating the creation story of Arnhem Land, a significant cultural region in Northern Australia. It visualises a songline's key elements: sacred waterholes, animal ancestors like geese and a goanna, and ancestral tracks.

For example, valuing relationality challenges the premise that individuals can be separated from their environment. On Colombia's Pacific coast, Afro-descendant communities describe their environment as *tejido de la vida*, a weave of rivers, forests, spirits, and people. Women known as *concheras* plan their journeys into the mangroves by watching the tides, timing their harvests to the tidal cycle. Receding waters expose the mudflats, and returning tides carry their canoes home.

Across the same continent, Maroon communities, descendants of enslaved Africans who escaped colonial plantations, have lived deep in the rainforests of

Suriname and French Guiana. Since the seventeenth century, when they first settled there, their political institutions and justice systems have endured into the present day. Notable among their practices is a form of land stewardship that prevents land from being sold, because the forest is regarded as a living relative—a kin who, as the history of slavery reminds them, must never again be treated as a commodity.

Escobar counts these worlds as examples of autonomous design where lives and systems are shaped according to the inhabitants' own principles. The designing goes both ways, because what is built then shapes the builder. When practices are passed down across generations, the structures of institutions, technologies, and infrastructures continue to reflect and reinforce what that society values. Other worlds exist because other values exist.

Valuing Otherwise

Starting from different values yields different measures of what we consider true or false, good or bad.

Japanese botanist Tomitaro Makino once declared that "there is no such thing as a weed." He argued that what counts as a weed depends entirely on the goals and frameworks that surround it, and he refused to classify any plant as inherently undesirable. Agriculturally, weeds are plants that compete with crops, so in wheat fields, dandelions are weeds. Aesthetically, weeds are plants that disrupt expectations of how certain spaces should look; in manicured gardens that aim for neatness, sprawling rosette-forming plants are weeds. Ecologically, however, many so-called weeds such as clover or goldenrod enrich the soil and support pollinators.

Speedwells, common in lawns and gardens, are often considered weeds, but they are also important wildflowers that provide nectar for small pollinators like bees, beetles, and butterflies.

As we see how the label shifts with power and intent, we become more conscious of how it shapes our sense of what belongs and what does not. By challenging the universality of "weed" as a label, Makino reminds us not to mistake what is contingent for what is universally true. Even around one plant, many values and many worlds can be found.

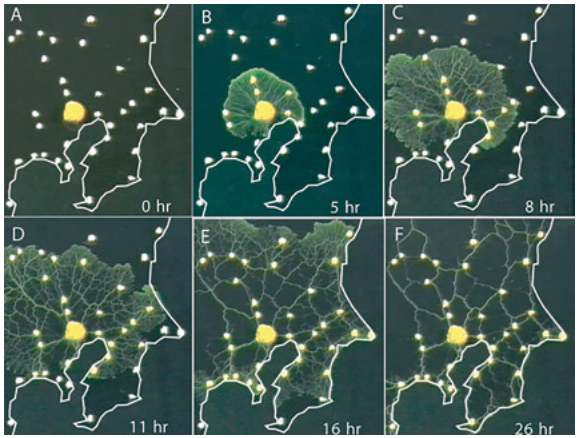
Likewise, rituals and beliefs that are dismissed as irrational can be true in their own ways. Martin Savransky writes that many things can be real, and that there are innumerable ways they can be so in their own habitats and lifeworlds: through compelling action, attracting attention, or engendering care.

In northern China, in provinces such as Shanxi, Shandong, and Hebei, families conduct ghost marriages to tend to the social and emotional needs of spirits. When someone dies unmarried, relatives may arrange marriages between two deceased individuals, or even between the dead and the living. By easing the suffering of the departed, these rituals are believed to restore social equilibrium and reduce restless hauntings. After all, spirits need consolation also. Not even in the afterlife should anyone be alone.

Slime moulds too can seem alive, as they solve mazes and adapt. This behaviour is surprising because *Physarum polycephalum,* a yellowish, veined organism, has no brain, nervous system, or centralised control. Billions of years old, it is a single-celled organism that spreads weblike across damp surfaces, expanding and contracting to feel out its surroundings.

In one experiment, scientists placed a slime mould at the centre of a petri dish and arranged oat flakes around it to resemble the layout of major cities in the Tokyo metropolitan area. Sensing nearby nutrients, the mould

began reconfiguring its shape to reach every oat flake. Within hours, it settled on a formation it judged most efficient—a layout strikingly similar to Tokyo's rail network, which had taken engineers years to design.



In under thirty hours, a slime mould network (in yellow) finds optimal route to connect itself to nutrients spread across a series of oat flakes (white blobs), mimicking existing rail network cities in connecting the Tokyo metropolitan area.

Appreciated through a pluriversal frame, these examples compel us to reconsider what deduction and companionship can look like. Spirits and slimes, however unfamiliar they may seem, are salient characters within the communities that recognise them. They remind us of the range of actors—human and otherwise—that our actions and epistemologies can be informed by.

Living Beside Difference

Among the ontologies that exist, some may well be incommensurable. But incommensurability does not have to mean separation, especially for worlds of extreme difference that nonetheless share borders or remain porous to one another. Argentinian semiotician Walter Mignolo proposes "border thinking" as a way of holding the contradictions one encounters, much as those who dwell in colonial and civilisational margins often must.

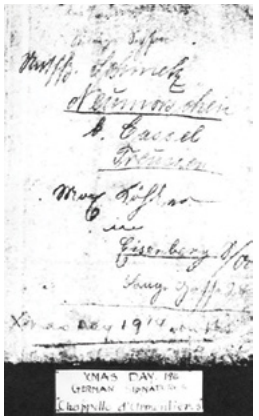
Colombia's Atrato River seems torn between two imaginaries: one of the state, and one of Afro-Colombian and Indigenous communities. For the state, the river is a legally defined natural resource, valued for transportation, irrigation, extraction, or development. For Afro-Colombian and Indigenous communities, however, the river is a living being that cannot be treated as a merely functional asset.

Although the two worldviews appear opposed, Colombia's Constitutional Court in 2016 granted the Atrato River legal personhood, declaring it a rights-bearing subject entitled to protection, maintenance, and restoration. The decision did not erase the ontological tension—between river as ecosystem and river as kin—but held both frames together. Rather than forcing consensus on what the river is, it created a shared legal and political space in which multiple worldviews, contiguous yet distinct, could shape governance.

Coda

Perhaps the most totalising world imaginable is the trench of war. Yet even there, as life and logic bend to the spray of incoming artillery, more than one world can exist at once. During the Christmas Truce of 1914, soldiers from opposing sides along the Western Front exchanged gifts, sang carols, and played football in no-man's-land. More enduring still was the "live and let live" ethos that emerged throughout World War I: a tacit agreement between enemies to minimise bloodshed by refraining from attacking during meals, allowing safe passage for trench repairs, or staging artillery fire in predictable and non-lethal patterns. Even in war, spaces of mercy can be sustained across the front.

In the words of Walt Whitman, each of us, too, is large and contain multitudes. We are, at minimum, someone's companion and someone's child, and throughout our lives we toggle between overlapping cosmologies. We juggle the demands of the outside world and the desires and demons only we know. While the multiverse of the popular imagination is often portrayed as fantastic elsewheres, the pluriverse is here already.



A British soldier collected signatures of German soldiers during the Christmas Truce of 1914; they had agreed to write to each other after the war ended.

LANGUAGE Sanskrit

PROVENANCE Jain ethical and philosophical traditions

[4]

अहिंसा, अपरिग्रह, अनेकान्तवाद

Jainism's Three Jewels: Ahiṃsā, Aparigraha, Anekāntavāda (Non-Violence, Non-Acquisition, Non-Absolutism)

At a Glance

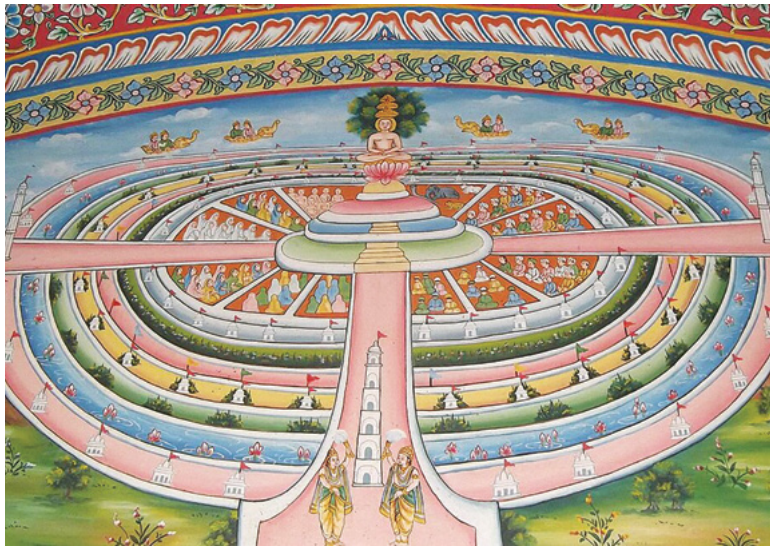
Jainism's Three Jewels ask the Public Service to approach complex problems with care, restraint, and many-sidedness. Non-violence points to minimising avoidable harm; non-possessiveness points to loosening attachment to one's preferred frame; non-absolutism points to designing with multiple truths in view. For Singapore, this could mean looking at how policies may have unintended consequences, how agencies become attached to inherited tools or positions, and how difficult issues require more than one valid perspective to be held at once.

This is especially relevant for social policy, climate transition, regulation, enforcement, technology governance, and cross-agency trade-offs, where solutions may benefit some groups while burdening others.

Guiding Questions

- Who or what might be harmed by this policy, even if the intent is sound?
- What assumption, tool, or position are we too attached to?
- For complex issues, whose view is incomplete on its own but still essential if we want a fuller understanding?

Jainism is one of India's most ancient spiritual traditions, with historical roots stretching back to at least the 9th–8th century BCE. It is a path of self-discipline and nonviolence, guided by the teachings of the Tirthankaras, spiritual victors who have crossed the stream of rebirth and shown the way for others.



This painting at the Tijara Jain temple in India depicts the Samavasarana, or divine assembly hall, where all living beings—humans, animals, and heavenly creatures—gather in concentric circles to hear the teachings of a Tirthankara.

The goal of Jainism is moksha, the liberation of the soul (*jiva*) from the painful cycle of birth, death, and rebirth (*samsara*). A core tenet is that every living thing—from humans and animals to plants and even microscopic beings—possesses a jiva, an eternal, conscious life-force. Though inherently pure, the soul becomes weighed down by karma that attaches through actions, thoughts, and words. Purification is pursued through one's own ethical and meditative efforts.

The path is structured around the Three Jewels (*Ratnatraya*): *Samyak Darshana* (Right Faith), *Samyak Jnana* (Right Knowledge), and *Samyak Charitra* (Right Conduct). While Right Conduct is defined by the Five Great Vows, this essay focuses on the three jewels commonly understood to embody the Jain worldview: *ahiṃsā* (non-violence), *aparigraha* (non-possessiveness), and *anekāntavāda* (non-absolutism).

Ahiṃsā (non-violence)

At the heart of Jain ethics is ahiṃsā, the foremost of the Five Great Vows, instructing adherents to do no harm in deed, word, or thought. Jains are strict lacto-vegetarians or vegans, as the raising and slaughtering of animals are a form of violence. Devout monks and nuns go further by sweeping the path before them to avoid stepping on insects, wearing a cloth mask to prevent accidentally inhaling airborne organisms, and avoiding root vegetables like potatoes and onions as their bulbs can be home to a multitude of microorganisms. If all living things possess a soul that is individual and eternal, then every being has a right to exist without fear or injury.

A *pinjrapole*—an animal shelter rooted in Jain and Hindu traditions of non-violence—takes in elderly, injured, or abandoned animals. Many are cattle who have stopped producing milk or labour, and receive refuge here instead.

Ahiṃsā also extends into the realm of the mind. It challenges us to move beyond what literary theorist Eve Kosofsky Sedgwick calls "paranoid reading", a mode of intellectual engagement rooted in a "hermeneutics of suspicion"—associated with Marx, Nietzsche, and Freud—that seeks to expose hidden violence, motives, or power structures. While essential for critique, a purely paranoid approach commits intellectual violence as it dissects, exposes, and anticipates rejoinders while foreclosing any good that might appear.

As an alternative, Sedgwick offers "reparative reading." Instead of approaching a text with suspicion, a reparative approach seeks to find sustenance, exercising intellectual care to find what might be life-giving, useful, or surprising.

Sedgwick recounts the AIDS epidemic of the 1980s and 90s, during which many were suspicious about

the origins of HIV. A paranoid reading might ask if the virus was deliberately engineered by the U.S. government to kill marginalised populations. But Sedgwick notes how this line of questioning reveals nothing new; it only confirms pre-existing despair and suspicion, and does not offer a path forward.

In contrast, Sedgwick's friend, activist Cindy Patton, adopted a reparative stance, shifting the question from "is it true?" to "what can we do?" Doing so, she noticed that the focus on gay men eclipsed the needs of other groups affected by HIV, such as women and people of colour. She also observed that early public health discourse centred around "risk groups" and instead proposed the framing of "risk behaviours", delinking the virus from identity and grounding prevention in actions that contributed to transmission. Reparative reading opened possibilities for re-contextualising the epidemic in new language and lenses, without exerting additional violence on those already suffering.

Aparigraha (non-possessiveness)

Aparigraha is the principle of non-possessiveness or non-attachment, understanding attachment to material and worldly possessions as a primary source of greed, jealousy, and violence. One may use material things in daily life, but not to the point of developing spiritual or emotional dependence on them. For lay Jains, aparigraha can be practised by setting deliberate limits on one's wealth and possessions and donating excess earnings to charity for a life of simplicity.

Drawing on Jain principles, Mahatma Gandhi developed his social and economic philosophy of "trusteeship." Reducing his possessions to a pair of spectacles, sandals, a spinning wheel, and a few clothes and books, he argued that wealth beyond basic needs is not truly owned by the individual but held in trust for society. The wealthy, he maintained, should act not as owners but as stewards of surplus capital for the benefit of the community, especially the most disadvantaged. Where charity begins by first asserting ownership over one's assets before giving them away, trusteeship starts

[4] अहिंसा, अपरिग्रह, अनेकान्तवाद (JAINISM'S THREE JEWELS)

from the more radical premise that surplus wealth was never one's own to begin with. Jamnalal Bajaj, a successful industrialist, was so moved by Gandhi's thinking that he set aside his fortune to fund Gandhi's independence movement.

The Svalbard Global Seed Vault, located deep inside a mountain on the Norwegian island of Spitsbergen, is the world's largest secure backup for plant seeds. It acts as an international insurance policy for food supply.

Possessiveness over material goods is easy to imagine and discourage, but lesser realised is possessiveness over thoughts and heuristics. Consciously or not, we gather epistemic and intellectual armour to protect our answers from being made "wrong", guarding our ideas and worldviews with zeal.

In the 1840s, Dr. Ignaz Semmelweis showed that when doctors washed their hands in chlorine solution before delivering babies, mortality from childbed fever dropped from as high as 18% to around 1%. Yet the medical community in Vienna then fiercely resisted his findings. Semmelweis' data made no sense within the prevailing humoral theory, which held that disease arose from imbalances of "humours" (from Greek chymos, "juice" or "sap") in the body. Gentlemen doctors were thought to be balanced and therefore clean, and the suggestion that they might carry harmful particles (what we now know as germs) was taken as a personal and professional insult.

It would take decades—and the later work of Louis Pasteur and Joseph Lister, after more women had died—for humoral theory to be replaced by germ theory. We now

understand that many illnesses arise not from internal imbalance but from microorganisms entering the body from outside, which explains why something as simple as washing hands works—and continues to save millions of lives each year.

An openness to new configurations of thought, or to unfamiliar data points, is a condition of resilience and growth. In a world of dizzying complexity, we should expect to feel bewildered, and we should consider when our possessiveness over mental frameworks is what hinders us most.

Anekāntavāda (non-absolutism)

Anekāntavāda is the doctrine of "many-sidedness" and "non-absolutism." Reality cannot be captured by any single truth; to insist that one's own perspective is complete is a form of intellectual violence. The classic parable to explain anekāntavāda is that of the blind men and the elephant. Each man touches a different part of the elephant and each comes to a completely different conclusion on what the object is. The one who touched the leg described a pillar; the one who touched the trunk, a thick snake; the one who touched the tail, a rope. Each person might be right within a certain context, but the mistake lies in insisting that one's context is all there is.

The rise of "super wicked problems" is one domain that urgently calls for anekāntavāda. As scholar Benjamin Cashore and his colleagues wrote, "super wicked problems", such as climate change, have four interlocking features. First, time is running out on a non-negotiable deadline; each year of inaction shrinks the window to avoid irreversible harm. Second, those who cause the problem are also tasked with solving it, producing deep conflicts of interest. Third, there is no central authority capable of enforcing a unified response. And fourth, these conditions fuel a tendency to discount the future, as long-term survival is overshadowed by the political calculus of the present.

The very nature of super wicked problems—fragmented, multifaceted, and rife with conflicting interests—makes

[4] अहिंसा, अपरिग्रह, अनेकान्तवाद (JAINISM'S THREE JEWELS)

"one-size-fits-all" solutions unworkable. Perhaps more—as many as possible—need to be invited into the tent of our solutions. Beyond insisting on the many-sidedness of any single perspective, anekāntavāda nudges us to think more broadly and unconventionally about the collaborators we work with and collaborations we form.

The evolution of the British Columbia carbon tax is one example of this thinking. When first introduced, the tax was domestically unpopular and politically vulnerable, easy for future administrations to repeal. To make it more durable, its architects designed it to be revenue-neutral: every dollar collected from the tax on fuels like gasoline was returned to citizens and businesses through cuts in personal and corporate income taxes.

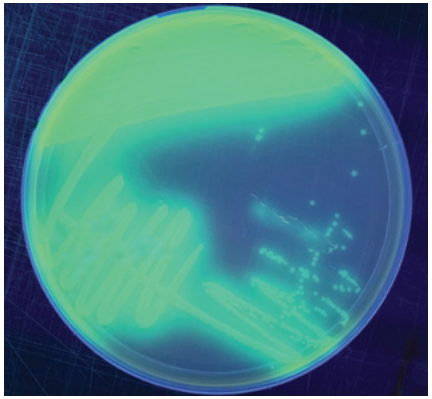
Subsequently, the government expanded the circle of winners by sharing a portion of the tax revenue with municipalities and school boards, on the condition that they committed to carbon-neutrality plans. While this meant the policy was no longer strictly revenue-neutral, the revenue was still being reinvested to support the long-term decarbonisation the tax was designed to accelerate. Meanwhile, in the short term, the new cost imposed by the carbon tax was offset by immediate financial benefits, attracting a broad base of supporters who now had a vested interest in the policy's survival. By serving the interests of many different groups at once, the many-sidedness of the coalition made the policy politically resilient.

Anekāntavāda also alerts us to the possibility that fields we assume to be unrelated may hold solutions for one another. One case in point is biotechnology, which is often treated as synonymous with pharmaceuticals even though its tools and methods apply far more broadly. At the same time, oil majors and environmentalists are often cast as being locked in a zero-sum conflict over emissions and extraction.

If we set aside these fixed categories, as bioengineer Drew Endy notes, new combinations reveal how

biotechnology might help transform what appears to be an impasse into a space of collaboration. As early as 1971, genetic engineer Ananda Mohan Chakrabarty had developed a species of Pseudomonas bacteria capable of digesting about two-thirds of the hydrocarbons found in oil spills. More recently, String Bio, a Bangalore-based startup, has converted methane, a potent greenhouse gas, into high-value single-cell proteins for animal feed and other sustainable ingredients.

Endy's point is that if biotechnology can turn harmful emissions into carbon-negative products, a central deadlock in the energy transition can be sidestepped. If bioengineered microbes can turn toxic waste into useful output, what once appeared to be an impasse between "clean tech vs. big oil" reveals many possible paths for collaboration. Moreover, alignment of interests is beneficial to all, because to generate the capital and support needed to address global challenges, solutions must benefit a wide array of stakeholders at once.



Colonies of Pseudomonas putida glowing under ultraviolet light. This bacterium can pull in iron that is hard to access in nature, an ability that inspired later work on bacteria designed to break down oil pollution.

Coda

The three jewels—ahiṃsā, aparigraha, and anekāntavāda—offer an integrated path for reorienting our relationships with ideas, each other, and the problems we face. Taken together, their teachings call us to resist the false binaries of our time. They show us how the spiritual can also be practical, and how to live more intelligently is also to live more compassionately.

LANGUAGE English

PROVENANCE Cybernetics, systems theory, adaptive regulation

[5]

Thermostatic Governance

At a Glance

Thermostatic governance asks the Public Service to design institutions that can adjust when conditions change, without losing sight of their core purpose. For Singapore, this could mean looking at policies where demand, risk, public sentiment, demographic pressure, service load, or frontline strain changes faster than the usual policy review cycle.

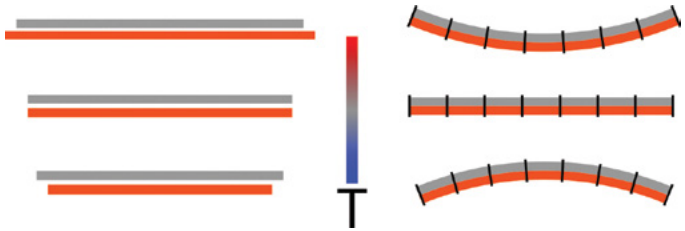
This is especially relevant for healthcare demand, housing access, climate risk, transport load, social assistance, workforce planning, or public trust. The key is to distinguish the policy's core intent — affordability, resilience, safety, access, dignity — from its adjustable settings, such as eligibility criteria, subsidy levels, service standards, manpower deployment, communication posture, or review frequency.

Guiding Questions

- What signal would tell us that the current setting is no longer fit?
- What changes can be agreed upon in advance, so the system can respond quickly when conditions shift?
- Where are frontline or operational officers repeatedly seeking approval for situations that are not truly exceptional, but simply part of normal variation?

In common understandings of public policy, change in status quo is often seen as a rupture of equilibrium. This framing assumes systems to be homeostatic—that is, that they are internally stable. Disturbances are therefore interpreted not as endogenous pressures but exogenous shocks, anomalies arising from forces that are, somehow, "outside" the system.

Thermostatic governance inverts this logic by embedding potential disruptions into a system's design. Like a thermostat that changes its function based on temperature, thermostatic governance maintains a durable goal ("the room must stay at 22°C") through the possibility of flexible response ("if above 22°C, cool; if below, heat"). Change becomes less a threat and more an occurrence the system is already prepared to handle.



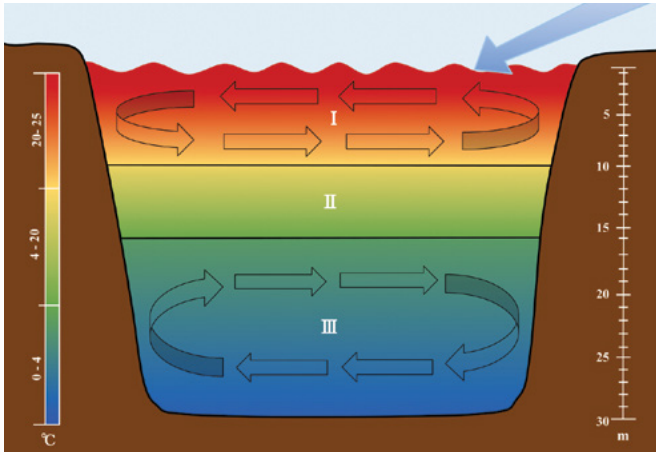
One example of how thermostats might work, with a bimetallic strip that bends one way or another depending on temperature, to responsively trigger either a cooling or heating system.

Stability Through Proportional Response

Proportional response, where the degree of adaptation scales to the magnitude of disturbance, binds flexibility and stability together.

Consider how deep lake water is used as a cooling medium in Swiss computing and district-cooling systems. Cold water is drawn from the hypolimnion—the lake's lower layer, where temperatures remain around 4–6 °C year-round. A separate, closed loop of purified water circulates through servers or cooling infrastructure. As this internal water absorbs heat, a heat exchanger transfers the thermal energy to the colder lake water, which is then released into the thermocline, a naturally warmer and more dynamic layer of the lake.

The system's design precision—differentiating intake and release points by depth, and clearly separating



Lakes often form three temperature layers in warm weather: a warm (epilimnion), mixed middle layer (metalimnion), and a colder bottom layer (hypolimnion). Wind mainly mixes the surface, while deeper water remains isolated.

where contact is permitted from where it must never occur—makes the system efficient, adaptive, and safe. Its response scales organically: a modest increase in computational load requires only a small increase in cooling flow, while surges in activity draw more. Because thermal exchange occurs across a boundary rather than through direct mixing, the purified internal loop remains uncontaminated, preserving the operating conditions that sensitive computing systems require.

Change is driven endogenously by institutions' rules

Thermostatic systems also allow for change from within. Instead of viewing shocks as external disturbances, they treat them as valuable signals that goals are not being met. Once misalignment is sensed, the institution can make corrective adjustments.

Political scientists Benjamin Cashore and Michael Howlett offer a case of U.S. federal (publicly owned) forest policy in the Pacific Northwest. Like setting a thermostat to a target temperature, institutions first defined a core objective. In this case, they were environmental protection goals as codified through the Endangered Species Act (1973), the National Forest Management Act (1976), and the National Environmental Policy Act. These laws included a mechanism to identify and protect endangered species (ESA), provisions to prevent economic considerations from unduly suppressing environmental protection (ESA), and provisions that

required policymakers to adjust their land and resource management plans to maintain viable populations of certain species (NFMA). The setup worked in tandem to link environmental indicators to policy change, such that data on ecological decline would automatically trigger policy adjustments.

In the late 1970s, this framework was tested when Northern Spotted Owl populations collapsed. The owl is known as an indicator species, meaning its population health reflects the health of its forest habitat. These dire signals, however, were challenged by land management agencies that had strong relationships with industry and forestry associations.

Environmental campaigners responded by pursuing litigation, building on protections in the ESA, NFMA, and NEPA. They succeeded in having the Northern Spotted Owl listed as endangered under the ESA. Once the listing took effect, the ESA required agencies to devise a plan for recovery.

A northern spotted owl.

When it became clear that saving the owls would significantly reduce timber supply, efforts were again made to stall recovery. But institutional rules, enshrined

in key legislation, ultimately prevailed. The matter was escalated to the White House, which maintained that the maximum amount of logging must be consistent with the law. Rapid and substantial policy changes followed, the speed of which was in stark contrast to the inaction on privately owned land, which the owl too was facing a similar population collapse.

The Northern Spotted Owl, thankfully, still survives. By the World Wildlife Fund's count, 99 percent of species protected under the Endangered Species Act have avoided extinction.

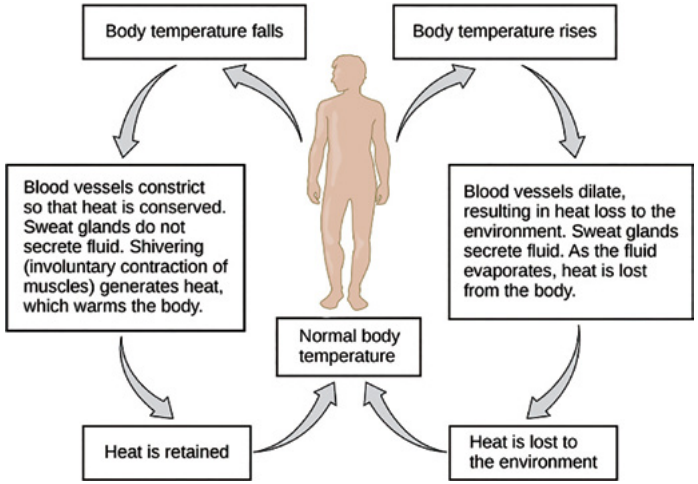
Recovery and adaptation in system design

Thermostatic governance embeds recovery and adaptation into its structure. Crucially, rules are not conflated with goals; operational settings remain separate from core objectives, just as lake water never touches the servers it cools. Because of this disaggregation, mechanisms can be altered without fear of changing fundamental goals.

The same logic appears not only in large mechanical systems, but in our bodies as well. During pregnancy, the body pursues a singular aim: sustaining the life and health of both mother and developing fetus. To do so, it enacts numerous physiological adaptations that are distinct yet tightly coordinated.

To meet rising demands for oxygen and nutrients, the mother's circulatory system increases blood volume by up to 45 percent. To move this additional supply, the heart increases its output accordingly. Breathing capacity also expands, as the respiratory system works to oxygenate a larger volume of blood. Meanwhile, the immune system undergoes its own recalibration, tempering certain responses so as not to treat the semi-foreign fetus as a threat, while remaining robust enough to detect infection.

Pregnancy thus reveals a system in which flexibility—across multiple physiological settings—ensures stability in service of an overarching goal. Clear differentiation between operational adjustments and that larger aim prevents the body from tripping over itself, enabling it to sustain both nursing mother and growing child.



The temperature of the human body is also kept relatively constant through a thermostatic-like mechanism, where different bodily responses are triggered to manage heat retention or heat release.

Coda

Few things can match the miracle of life, yet the elegance of thermostatic governance can also be found in its namesake: the mechanical thermostat of the late nineteenth century. Inside it is a bimetallic strip—made from two different metals, such as steel and copper—bonded into a single piece.

Because these metals expand and contract at different rates, changes in temperature cause the strip to bend. Suppose the dial is set to 22 °C. When the temperature falls below that point, the strip bends in one direction and completes the circuit that activates the furnace. When the temperature rises above 22 °C, it bends the other way and completes the circuit for the air conditioner.

Like the old thermostat, governance too can be sensitive and responsive to its environment. Thermostatic governance offers a model for anticipatory design, in which systems are durable precisely because they expect to change and be changed.

LANGUAGE English

PROVENANCE Systems thinking; behavioural science

[6]

Virtuous Cycles

At a Glance

Virtuous cycles ask the Public Service to look for where small, well-placed actions can compound into larger system shifts over time. For Singapore, this could mean paying closer attention to policies, platforms, incentives, norms, or partnerships that reinforce one another rather than treating each intervention as a standalone effort.

This is especially relevant for sustainability, public health, skills development, digital adoption, social trust, civic participation, and industry transformation, where early gains can lower barriers, build confidence, attract participation, and make further progress easier. Success can be measured not only by what interventions achieve on one occasion, but also whether they have systemic impact by making other good processes and good outcomes easier to achieve in the future.

Guiding Questions

- What positive behaviours or capabilities could this intervention help normalise?
- Where can early adopters, trusted partners, or small wins create wider momentum?
- What reinforcing feedback loops might make progress easier, cheaper, or more self-sustaining over time?

In the Spermonde Archipelago of South Sulawesi, Indonesia, community members assemble six-legged steel "reef star" frames in shallow water before placing them on damaged seabeds. The structures stabilise loose rubble and support coral fragments, allowing reefs to recover rapidly within a few years while restoring fish habitat and coastal protection.

When surrounded by terrible news, it is easy to forget that positive change can also compound.

For many of these changes, especially those involving new technologies or social behaviours, adoption follows a characteristic S-curve pattern: first a slow phase where adoption is limited; then a period of rapid acceleration as costs decrease, performance improves, and social acceptance grows; and finally, slowing down as saturation is reached. Along the way, they are supported by interconnected and reinforcing feedbacks: such as economies of scale, learning-by-doing, social contagion, infrastructure development, and network effects.

Loops Go On and On

Progress is not always predictable, and sometimes begins unexpectedly. While solar photovoltaic technology (which harnesses solar energy) is one of the fastest growing industries today, its early years were marked by scepticism and geopolitical uncertainty.

When the 1970s oil crisis hit, Japan, confronted with its acute energy vulnerability, started the landmark Sunshine Project. Launched in 1974, the project was a large-scale, long-term national R&D programme with a strong focus on solar power. By the late 1990s, Japan had become the world's largest producer of solar photovoltaic technology.

Shortly after Japan reached functional competency in solar energy, Germany passed the Renewable Energy Act in 2000. The Act created a massive, guaranteed market through feed-in tariffs: a commitment by the government to purchase every kilowatt-hour of electricity generated over the next twenty years at a fixed, profitable price. With this guarantee in place, investing in solar energy was no longer a risky gamble but a safe long-term bet. A market of scale and reliability had been created where none had existed before.

The surge in German demand opened a vast opportunity for manufacturers, particularly in China, where factories could be built at scale. Producing millions of solar panels dramatically reduced unit costs. China's manufacturing boom met Germany's guaranteed demand, making solar energy cheaper to produce and easier to adopt worldwide. Between 2010 and 2022, the price of newly commissioned utility-scale solar photovoltaic projects fell by 89%. Today, solar power is cheaper, more accessible, and more widely adopted than ever before.

Solar panels being installed as fences in Germany, where they have become cheap. Placed vertically and dual- sided, these solar panels have the extra advantage of capturing light from both sides, and shed excessive heat and snow more easily in the summer and winter.

Sustained R&D in Japan, powerful market-pull policies in Germany, and massive manufacturing scale-up in China. Each country responded to its unique pressures,

leveraging their unique strengths, resulting in a positive loop of interrelated moves. Once niche and prohibitively expensive, solar photovoltaics have become one of the fastest-growing and cheapest sources of electricity in history, its cost plummeting by over 99% since the 1970s, propelled by a virtuous cycle of policy support, relentless innovation, and massive economies of scale. Today, electricity from new photovoltaic installations is cheaper than that from new coal and gas plants in most of the world. By 2030, it is projected to be two to three times cheaper still.

Wind energy followed a similar path. The cost of energy from onshore wind projects fell by 69% between 2010 and 2022, driven mainly by falling turbine prices and increased capacity. Over the same period, the cost of offshore wind energy declined by 59%. Together, these broad reductions in renewable energy prices triggered a green electron revolution, setting off a domino effect across multiple sectors. As clean energy became cheaper, the transport sector moved rapidly toward electric vehicles (EVs), whose adoption accelerated as they became more economical than gasoline alternatives. The resulting EV boom spurred heavy investment in battery R&D, driving improvements so dramatic that battery prices fell by 90% between 2010 and 2020.

The positive externalities continued as new battery technologies found applications in an adjacent sector: grid-scale energy storage. Even second-life EV batteries —whose capacity has fallen below 80 percent and are no longer suitable for vehicles because of reduced driving range—remain useful for storing large amounts of energy in stationary grids.

The cascade goes further. Environmentalists have long argued for hydrogen as a means of decarbonising heavy industries such as steel and chemicals, but for many years green hydrogen was prohibitively expensive to produce. The cleanest method—electrolysis, which splits water into hydrogen and oxygen—requires large amounts of energy. As clean electricity and battery

At Stornorrfors hydroelectric dam in Sweden, the country's largest plant by electricity output, a new gate will be built using 120 tonnes of hydrogen-based "green steel." The first project of its kind, it shows how heavy infrastructure can begin to decarbonise.

technologies have advanced, however, green hydrogen has moved closer to economic viability.

With green hydrogen increasingly available, major industries such as steel and chemicals can begin to decarbonise. Steel, for example, is traditionally produced using coke in blast furnaces to remove oxygen from iron ore, a process that generates substantial CO_2 emissions. Hydrogen can instead act as a clean chemical reductant, replacing coal in the reaction. In Direct Reduced Iron (DRI) processes, hydrogen (H_2) reacts with iron ore (Fe_2O_3) to produce water (H_2O) rather than CO_2 as a byproduct (IEA 2023). The virtuous cycle continues.

Loops Go Up and Down, Inside and Out

Change does not happen only from top-down or industrial action. It can also ripple from the bottom up, starting with foundational shifts in how knowledge is created and shared.

In the early days of computing, sharing source code was common practice among programmers. In the 1980s, however, software became increasingly proprietary, with source code kept secret for private interests even when they had originated in public or academic contexts.

Richard Stallman, then a programmer at MIT, saw this shift as a moral failure that constrained both collaborators' and users' freedom. In response, he launched the GNU Project in 1983 with an ambitious goal: to create a complete, Unix-compatible operating system composed entirely of "free" software—free in the sense of liberty, not price. This meant the freedom to run the program for any purpose, to study and modify its source code, to redistribute unmodified copies, and to distribute modified versions. Central to this effort was the invention of the GNU General Public License (GPL). Rather than using copyright law to restrict users, the GPL employed "copyleft" to guarantee these freedoms: anyone who modifies and distributes GPL-licensed software must extend the same terms to others, ensuring that openness is preserved through a legal mechanism, regardless of how many or whose hands the software passes through.

The open-source paradigm produced a wave of innovation and adaptation. The Apache HTTP Server runs a large portion of the world's websites; it began in 1995 as a collaborative effort by webmasters sharing software "patches"—hence the name, from "a patchy" server. Linux, meanwhile, underpins the Android

Open Source Seed Initiative packets carry a "copyleft" pledge: anyone may plant, breed, and share the seeds, but must preserve those freedoms for others. It resists corporate control that limits access to seeds, narrows range of crops grown, and makes food systems fragile by reducing their ability to adapt to pests and local conditions.

operating system and runs on all of the world's 500 fastest supercomputers. Still protected by the GPL, it continues to be developed collaboratively today, supported by a global community of thousands of contributors, including both volunteers and corporate-sponsored programmers.

Not only bottom up, change can also be inside out. One of the most promising therapies we know for both depression and substance use is known as behavioural activation therapy. It has been found to be as effective as cognitive behavioural therapy in treating depression, and has resulted in significantly higher abstinence rates among residents of a substance use treatment facility. Behavioural activation therapy is based on guiding the individual to identify actions that are aligned with their values, pleasure and/or mastery, and using those actions to create virtuous cycles to take over the vicious cycles that may have been present.

In a behavioural activation therapy session, the individual might first be asked to identify coping mechanisms that cause vicious cycles in their lives. For example, a common reaction to low moods that accompany depression might be to stay in bed and disengage from family and friends.

The individual might then be invited to reflect on whether these behaviours have led to outcomes that leave them feeling worse (for example, low energy or feelings of isolation and abandonment). They are next asked to identify actions that help them feel better—such as "walking", "going to my son's next parent–teacher meeting", or "thinking I'm an OK person." Finally, the individual is encouraged to make concrete plans to schedule these activities into their life and to track how their mood improves as a result.

Researchers found that even small amounts of positive emotion generated by these activities could create a virtuous cycle in patients' lives. These cycles of virtue could then extend outward to those close to them—family and friends—and reverberate back to the patient.

Coda

In *The Sun Also Rises*, Ernest Hemingway wrote that bankruptcy can happen "gradually, then suddenly." It might begin with the slow accumulation of debt and poor habits. But once a threshold is breached and bankruptcy declared, repercussions come strongly and immediately.

We should know, however, that the same jolt of acceleration can also happen in the direction of goodness. Positive change too follows the same pattern: a slow build-up and then a breakthrough exceeding what one might expect or imagine, fuelling other positive changes that echo back to each other. The world might be full of "black swan" events waiting to spring upon us, but so too is it brimming with positive surprise.

A superbloom in West Coast National Park, Western Cape, South Africa. Years of heat and drought keep the landscape bare, but each dry season adds to a growing bank of dormant wildflower seeds beneath the soil. After an unusually wet winter, that accumulated potential germinates at once in a superbloom event.

LANGUAGE English

PROVENANCE Engineering design; fault-tolerance protocols

[7]

Graceful Degradation

At a Glance

Graceful Degradation asks the Public Service to design systems that can lose capacity without collapsing entirely. For Singapore, this could mean looking at essential services, digital platforms, supply chains, healthcare systems, transport networks, social support schemes, and crisis operations to ask what must keep functioning when normal conditions fail.

This is especially relevant where systems are highly optimised, centralised, or dependent on tight coordination. Efficiency can make services smooth in ordinary times, but brittle under stress if there are no fallbacks, simpler operating modes, or clear priorities for what should be protected first.

Guiding Questions

- Which parts of what service must continue even under severe strain, because people's safety, dignity, livelihoods, or trust depend on them?
- Where might decline — in population, demand, usage, manpower, or growth — require not restoration to the old level, but a different way of providing services, organising spaces, and finding meaning?
- How can we help others understand when a smaller, slower, or simpler version of a system is not failure, but an opportunity to deliberately reflect on what matters most?

Artisanal soy sauce is made in wooden cedar barrels whose surfaces, despite looking aged, host microbes that ferment the sauce to produce complex flavours.

Graceful degradation is the understanding that decay need not lead to ruin. Systems can adapt by reducing parts of themselves, shifting to simpler states, or reorganising around what really matters. In some cases, the process of decay even produces new forms, functions, and meanings that did not exist before.

Graceful Degradation in Engineering

A series of interconnected examples will show us how graceful degradation is embedded into engineering.

The electricity grid is one system that cannot afford to crash, given how so many critical functions—public transport, automated systems, healthcare—depend on it. Moreover, electricity grids must maintain a constant frequency—typically 50 or 60 Hz—because most appliances and industrial systems are designed to operate within narrow frequency margins.

To preserve that stability, grids today are capable of automated load shedding, a protective mechanism that activates when electricity demand exceeds supply, such as during a heatwave or an industrial surge where more power is drawn than generators can safely provide. If unchecked, the strain will slow spinning turbines, cause the system's frequency to drop, and trigger cascading damage across everything that depends on

a stable frequency band. Automated load shedding kicks in by disconnecting lower-priority loads to relieve pressure, helping the grid recover balance before deeper failures occur. The impact is not reduced to zero; rolling brownouts can still occur as neighbourhoods take turns experiencing lower voltage. But the principle remains: by sacrificing limited sections of the grid, the system protects the functionality of the whole. It is a form of fault management that allows the grid to stay operational despite the flux that invariably comes.

Much of the electricity from grids is spent on the internet, where the average person spends over six hours daily. Websites, too, are informed by graceful degradation, as we have seen when the connection is spotty: videos degrade in resolution, and images are turned into placeholder icons. There is a hierarchy of what must appear, and what can be deferred. If a browser fails to load JavaScript (interactivity), CSS remains (design); if CSS fails, HTML (text, links, headings) remains. If only text appears, it can inform us of what is happening (that some features are down due to unstable connection), and suggest ways to troubleshoot. A proper triage of what can wait makes websites functional even when their loading is compromised.

The very architecture that undergirds websites—the internet—was born of graceful degradation. ARPANET, the internet's forerunner, was a Cold War solution to a single challenge: how to maintain communications if parts of the network were destroyed. Where information was previously transmitted through circuit-switched telephone systems requiring a dedicated line from sender to receiver, ARPANET pioneered packet switching, where data is split into packets that take various paths before reassembling at the destination. Routing protocols, which are rules for how data moves, help packet switching find the best route even when parts of the network go offline.

Our examples thus far are of objects on earth, which can be manually accessed and fixed when push comes to shove.

However, the same cannot be done for objects in space. When spacecraft travel on their lone orbits, their systems must withstand wear and tear on their own.

The Voyager probes are still sending back data from beyond the heliosphere. Voyager 1 and Voyager 2, both launched in 1977, took advantage of a rare planetary alignment that occurs once every 176 years, allowing them to perform a "Grand Tour" of the outer planets by hitching onto the planets' gravities as assists. Voyager 1 flew past Jupiter and Saturn; Voyager 2 continued to Uranus and Neptune. After completing their planetary objectives, both spacecraft were repurposed as interstellar probes—the first human-made objects to leave the solar system.

What makes their journey possible is a design protocol known as FDIR: Fault Detection, Isolation, and Recovery. If a sensor becomes inconsistent or a power line shorts, tasks are rerouted to backups, faulty units are disabled, or the spacecraft shifts into safe mode—a minimal configuration that conserves power and transmits only essential telemetry. Engineers must trust the spacecraft to detect its own failures and act accordingly. With Voyager now over 20 billion kilometres from Earth, there are no technicians to flip a switch on site.

Today, only the bare essentials of Voyager 1 and 2 remain, such as the radioisotope thermoelectric generator (RTG) that produces 50% of its original power; the high-gain antenna that still communicates from 20 billion kilometres away; and attitude control that keeps the antenna pointed at Earth.

Even the degradation of its systems has its own poetry. Before Voyager 1's camera shut down in 1990, it sent home a mosaic of 60 images of our solar system, which the Voyager team called "Family Portrait." It captured Neptune, Uranus, Saturn, Jupiter, Earth, and Venus; other planets were too far away, too close to the sun, or obscured by scattered light. Earth, too, was almost missed—except in one famous photo of our "pale blue

Voyager 1 captured this "Pale Blue Dot" just before shutting down its camera for good. Earth is barely visible, a tiny point floating in a shaft of light. Later, Carl Sagan described it as "a mote of dust suspended in a sunbeam", a reminder of our scale in the wider cosmos.

dot" where, barely edging into the field of vision, billions of us occupy less than one pixel of an image.

Cooperation in Smaller Groups

This pattern of reducing scope to preserve function appears outside engineering also. Where multilateral frameworks have become too unwieldy to operate, "minilaterals" emerge.

The multilateral institutions that shaped today's international order were created in a particular time and historical context. Scarred by the Second World War, states agreed to wide, inclusive cooperation necessary to stabilise currencies, lower trade barriers, and prevent another global conflict. These institutions were underwritten by the collective resources and political will of the victors—the United States and its allies. On the backs of those ambitions, multilaterals such as the UN, IMF, World Bank, and later the WTO were formed.

However, multilateral organisations have become less effective with time. Growing membership and diverging interests now make agreement and action slower. Their paralysis is cast in sharper relief as issues such as climate change, supply chain fragility, digital standards, and migration pressures become more rapid and biting.

Against that backdrop, minilaterals have become a practical way to keep cooperation moving, where states organise in smaller groups with tighter agendas. Some examples include the Quad, AUKUS, trilateral dialogues in Northeast Asia, and ASEAN-minus arrangements on supply chains and crisis response. These groups are small and work on tightly defined tasks, such as aligning technology standards or coordinating maritime monitoring, and without expectation that these groupings be permanent.

Minilaterals have nevertheless produced workable outcomes. The India–Japan–Australia Supply Chain Resilience Initiative has created shared early-warning systems for component shortages. The Singapore–Japan–UK green shipping corridor has agreed on fuel standards, emissions verification, and pilot routes for low-carbon vessels. AUKUS Pillar II has produced joint collaborations on undersea drones and quantum navigation. Smaller ASEAN groupings have coordinated haze monitoring and regional food-security stockpiles when full consensus was not possible.

Mandala polities offer a historical precedent for this mode of cooperation. From roughly the 9th to 15th centuries, in much of Southeast Asia, political authority operated through flexible and overlapping alliances rather than fixed territorial blocs. Influence expanded or contracted depending on capacity, and smaller courts or port-cities often took on administrative or trading

This mandala from esoteric Buddhism places Vairocana at the center, surrounded by eight Buddhas and bodhisattvas. Mandalas expressed a universe arranged in layered circles. Historians later used the same idea to describe political mandala systems in medieval Southeast Asia, where power radiated from a center rather than relying on fixed borders.

[7] GRACEFUL DEGRADATION

Visible, Audible, Beautiful Decay

roles when larger centres weakened. As with minilaterals, function shifted to units that could still work, allowing cooperation to continue in whatever form was viable.

Some processes of degradation can even allow new forms with new traits to emerge. In practices of visible mending, damaged fabric is both made wearable and beautiful, as fixes are celebrated through the radiant use of patches and threads. *Sashiko,* a Japanese embroidery style from the Edo period, reinforces worn work garments with white thread.

White geometric stitches shine against indigo cloth, a common colour for work garments in rural Japan because indigo dye is antibacterial and insect-repelling. Darning, a technique found in Europe, was traditionally meant to be the invisible repair of holes, but many today use bright threads, contrasting patches, and exaggerated weaves that playfully ask to be noticed. *Kantha*, practised in eastern India and Bangladesh, involves stitching together layers of old saris or dhotis with rows of running stitch to create quilts, wraps, or shawls. In all these instances, visible mending becomes more than a fix for damage, turning into a genealogical archive of the hands a fabric has gone through, and the bodies it has protected.

These sleeves show visible mending, where damage is repaired with colours that highlight rather than conceal the worn spots, adding character to the sweater while keeping it wearable.

A landmark work in contemporary music is William Basinski's *Disintegration Loops*, where the work itself is an aural witness to sonic decay. In the summer of 2001,

in an effort to preserve them, Basinski digitised 20-year-old tape loops he had found in his archive. He threaded the loops through a tape deck, left them running, and, on returning a short while later, was startled to find the tapes crumbling. With each pass through the spindle, the tape's iron oxide flaked off, leaving behind bare plastic patches. Intrigued, Basinski repeated the process several times with different loops. Some tapes crumbled in minutes; the longest took over an hour. With every disintegration, the music changed. Snatches of orchestral sound, loops Basinski had recorded from an easy-listening radio station decades earlier, warped and turned to hiss.

On the morning Basinski finished the recordings, he listened to them on the rooftop of his Brooklyn apartment with friends. As history would have it, that same morning he watched the Twin Towers fall. In the final hour of daylight, he placed a video camera on a tripod and pointed it at a smouldering Lower Manhattan; the plume of debris from the collapsing towers would drift downwind for up to five months, after having been flung nearly a mile into the air. Paired with the static video of Lower Manhattan billowing smoke on 11 September 2001, *Disintegration Loops* became the public elegy it had not originally sought to be.

The album cover of William Basinski's *Disintegration Loops* uses his rooftop footage of New York City after the World Trade Center collapsed. Basinski finished digitising the decaying tapes that same morning.

LANGUAGE Italian

PROVENANCE 17th-century Italian composers

[8]

Andante

(At a Walking Pace)

At a Glance

Andante asks the Public Service to pay attention to pace: not everything should move as fast as possible, and not everything slow is inefficient. For Singapore, this could mean looking at where implementation timelines, consultation processes, digitalisation efforts, infrastructure works, organisational change, or community interventions are moving faster than trust, capability, understanding, or behaviour can realistically follow.

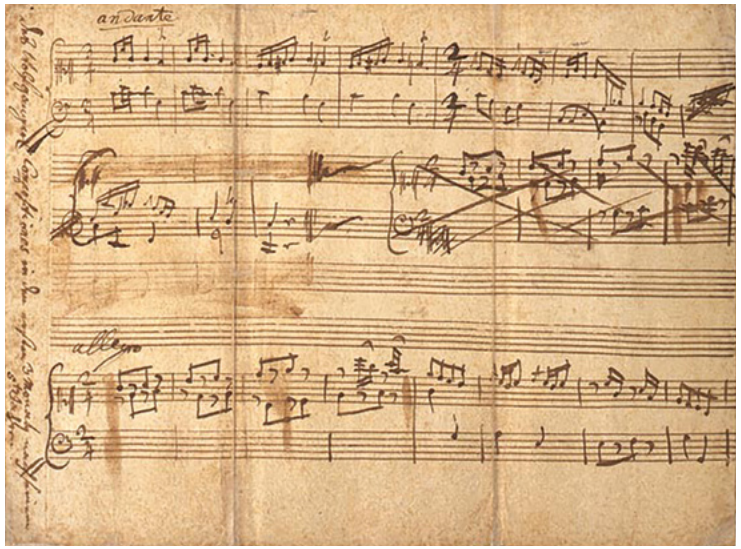
This is especially relevant for policies that require people to change habits, learn new systems, accept trade-offs, or coordinate across many actors. The right pace may differ between crisis response, public communication, capability-building, regulation, and community work.

Guiding Questions

- Where are we conflating speed with effectiveness, when different parts of work and the system may need to move at different paces?
- Where are we asking citizens, officers, or partners to adopt a change faster than they can understand it, trust it, practise it, or build it into daily life?
- Who gets to decide the pace of change, and how are they explaining the timing, trade-offs, and expectations to those who must move with it?

When one sees andante on a music score, it is a direction from the composer to play "at a walking pace." Andante, after all, comes from the Italian *andare*: to walk.

Before the seventeenth century, a piece's tempo in Western music was rarely written down. Tempo was instead implied by musical context including its time signature, the style of the piece, or the lyrics in vocal works. As theorist Gioseffo Zarlino wrote in 1558, if the text is cheerful, one should use "powerful and fast movements", and if it is "tearful" one should adopt "slow and long movements."



A score for Andante in *C major, K.1a*, one of Mozart's earliest compositions at age 5, as notated by his father, with "andante" marked in the top left.

The practice of explicitly marking tempo began to emerge in Italy in the early seventeenth century with composers such as Adriano Banchieri, who used terms like *adagio* and *allegro* in his 1611 work *L'Organo suonarino*. These markings were then understood less as strict metres and more as indications of mood. *Allegro*, for example, literally means "cheerful." Its modern association with speed comes from the assumption that joy has a naturally brisk character.

While the metronome's invention would quantify tempo into beats per minute, andante's instruction to play the music "at a walking pace" remains revealing and

Walking the Walk

instinctive for musicians, capturing an expressive nuance that numbers alone cannot fully convey.

Beyond music, walking is itself a practice of rhythm. Writer Rebecca Solnit observes that walking attunes the mind to roughly three miles an hour, a pace at which body and thought can work together. While walking, one absorbs details in the external environment—a storefront display, the offerings at a market, the gait of another passerby—and reflects inwardly, creating an exchange between perception and contemplation. Although much modern life often feels like teleporting between a series of locations and events, the simple act of ambling connects the spaces in between and encourages a loosening of thought, allowing the mind to also wander and find linkages between ideas previously separated. The cadence of walking enables a cadence of thinking.

Artist Orawan Arunrak's *Where are you living? #1*, based on her experiences walking around Bangkok, Berlin and Cambodia, charts details of everyday life on modest everyday materials.

Neuroscience offers an explanation: walking boosts creative insight by engaging two brain networks at once, the Default Mode Network (DMN) and the Executive Control Network (ECN). The DMN is often called the "imagination network", and becomes active when we are at rest, mind-wandering, daydreaming, or reflecting on our past and future. The ECN, in contrast, is our "focus network", and activates when we concentrate on a task, solve a problem, or make decisions.

Ordinarily these networks give way to each other—when the "focus network" is active, the "imagination network" quietens down. But the semi-automatic act of walking occupies the body just enough that neither network overwhelms the other, allowing the generation ("imagination network") and evaluation ("focus network") of novel ideas to flow cohesively.

Just as walking can loosen rigid cognitive patterns, it can also dismantle the adversarial postures that prevent human connection, a possibility demonstrated by conflict mediator Adam Kahane. In the "Visión Guatemala" project, Kahane and his team worked in the aftermath of the thirty-six-year Guatemalan Civil War. The acrimony between warring factions was deep, and included a state-sponsored genocide enacted by the Guatemalan military against the Indigenous Mayan population over issues of land, power, and human rights.

To bridge the divide, Kahane invited two representatives from opposing sides: Otilia Lux de Cotí, a respected Mayan educator and future member of the UN-sponsored Historical Clarification Commission; and Hugo Beteta, then a right-wing, military-aligned leader of CACIF, representing the interests of the traditional oligarchy. Between them was a core fracture of the war: Indigenous versus state, victim versus perpetrator.

[8] ANDANTE (AT A WALKING PACE)

An illustration by practice-based researcher Dee Heddon for *Walks to Remember During a Pandemic: 'With memory I was there'*, a project by artist Louise Ann Wilson, a lockdown project that invited participants to walk longed-for landscapes or places in their memory and draw their walk as a map.

Instead of convening a formal meeting across a table, Kahane told them to go on a walk together. Kahane recounted that when Lux de Cotí and Beteta returned, "the tension between them had evaporated." Their successful walk had a significant ripple effect, helping to unlock a stalled dialogue within the larger, deeply divided group, and became a catalyst for the peace process. Kahane later explained that walking side-by-side—no longer confronting each other face-to-face—they viewed the world from the same angle. In the unstructured movement of a walk, connection emerged.

Everything In Its Right Pace

As walking shapes our pace and posture to the world, our environment shapes our experience of time.

In performance venues, acoustics influence musical tempo and content. The soaring Gothic cathedrals of medieval Europe, with their expansive stone vaults, can possess reverberation times of eight seconds or more— which means that any sound made remains for at least eight seconds, as its echoes ricochet within the cathedral's interiors. In such spaces, fast passages blur into an unintelligible wash, so composers needed to adjust their music accordingly. Each space's acoustics gave rise to new forms of music.

The resonance of Notre-Dame de Paris, from its cavernous interior and hard reflective stone, was integral to the evolution of organum, an early form of Western polyphony. The composers of the twelfth-century Notre-Dame school, including Léonin and Pérotin, developed a style of organum characterised by long notes in the lower voice called the tenor, from Latin *tenere*, "to hold." The tenor would hold a single note from a Gregorian chant for an exceptionally long duration, creating a stable drone that allowed the upper voices to weave rapid and elaborate melodies.

Meanwhile, St. Mark's Basilica in Venice, with its multiple galleries and cascading echoes, became the birthplace of *cori spezzati* (separated choirs), an antiphonal style of music that uses call-and-response. In the sixteenth century, composers like Giovanni Gabrieli, the basilica's organist, would exploit the hall's acoustics by placing ensembles in opposing lofts. The basilica itself became an instrument, allowing for dramatic dialogues where phrases would call, respond, and mingle within the

The interior of Basilica di San Marco (St. Mark's Basilica) in Venice, with its soaring Byzantine architecture and long echoes, which gave rise to cori spezzati (separated choirs) in the 16th century that used the building's multiple galleries for antiphonal call-and-response music.

vast interior. In comparison, modern concert halls are meticulously engineered to have reverberation times of around two seconds. This shorter time is ideal for faster and denser harmonies of the Romantic and contemporary orchestral repertoire. Each architectural setting, from cathedral to concert hall, has its own temporal signature.

Beyond human architecture, our planet itself operates along immense and varied rhythms, a reality geologist Marcia Bjornerud calls for us to appreciate. A single inch of fertile topsoil can take 500 to 1,000 years to form, yet can be stripped by poor land management in years. The Ogallala Aquifer, a subterranean reservoir underlying eight U.S. states, has accumulated water for millions of years through rain and melting glaciers, but can be depleted in decades by high-capacity pumps today. By burning fossil fuels, we release carbon sequestered by ancient life—much of it from the Carboniferous Period around 300 million years ago—within minutes.

Appreciation for the intersections between geological and anthropocentric timescales, and the dizzying range embodied therein, is what Bjornerud calls "timefulness."

Llareta #0308-2831 (3,000+ years old, Atacama Desert, Chile)

A photograph from Rachel Sussman's art project *The Oldest Living Things in the World*, documenting a more than 3,000-year-old Llareta plant in Chile's Atacama Desert—part of her decade-long exploration capturing ancient organisms around the world that have survived for millennia, highlighting the intersection of deep time, environmental fragility, and the persistence of life.

Coda

To ignore the Earth's slow, generative rhythms while accelerating its destructive ones guarantees long-term instability for both the planet and ourselves.

When so much of life feels throttled by acceleration, andante is a reminder to tether ourselves to context: be it the biochemistry of a processing mind, the resonant acoustic habitat of a cathedral, even the geological pulse of the Earth itself. The most stabilising pace might be the one we were born with, the grounding act of placing one foot in front of the other, learning not to trip, learning to walk again in the rhythm of things.

[8] ANDANTE (AT A WALKING PACE)

LANGUAGE Tagalog

PROVENANCE Filipino psychology (Sikolohiyang Pilipino)

[9]

Kapwa

(Unity of Self and Others)

At a Glance

Kapwa asks the Public Service to see people not as isolated service users, but as persons embedded in families, neighbourhoods, workplaces, communities, and relationships of mutual obligation. For Singapore, this could mean looking more carefully at how policies affect networks of care, not only individuals: caregivers, neighbours, volunteers, migrant workers, seniors, children, community leaders, and informal helpers.

This is especially relevant for ageing, caregiving, social isolation, mental health, integration, crisis response, and community partnerships. Some forms of support work because people are connected; others fail because they assume people can navigate hardship alone.

Guiding Questions

- When policy treats one person as the "client", "beneficiary", "applicant", or "case", who else is actually part of the situation?
- A "senior" is often assumed to be a recipient of care, but might be a "caregiver" too. In what instances might policy categories conceal rather than reveal what other roles individuals hold — such as caregiver, worker, parent, neighbour, volunteer, patient, tenant, or community member?
- Where can policy dignify and strengthen the relationships people already rely on?

A traditional Filipino *balangay* (boat) serving as a floating home and workplace, with multiple community members living, working, and travelling together under a thatched roof shelter as they navigate between coastal villages.

The Filipino word *kapwa* can be loosely translated as fellow person, kin, or neighbour. It comes from *puwang*, meaning "gap" or "space", combined with the prefix *ka-*, which signifies interconnectedness. Kapwa therefore refers to a kinship in which the boundary between self and others dissolves; to practise kapwa is to be a "companion at the gap." Even where divides exist, kapwa is manifest in the spirit of *bayanihan*, where individuals work for the common good and embody everyday heroism (*bayani*) for others in any kind of need.

Kapwa is an indigenous Tagalog word and core value that predates modern scholarship, but entered academic discourse in the late twentieth century. In the 1970s, social psychologist Virgilio Enriquez founded Sikolohiyang Pilipino (Filipino Psychology) in direct response to dominant Western psychological models, which he and other postcolonial scholars saw as culturally incompatible and inadequate for understanding the Filipino context.

Sikolohiyang Pilipino has since resonated with other non-Western thinkers working toward the indigenisation and decolonisation of the social sciences. Within this tradition, kapwa—the recognition of a shared inner self—forms the foundation of Filipino personhood (*pagkatao*) and stands as a core value of Filipino culture.

To Act As If We Were in the Same Boat

In Filipino, the word for a small community, *barangay*, derives from *balangay*, a small boat. This link between community and seafaring reflects the Philippines' geography as an archipelago of 7,641 islands in the western Pacific, shaped by collisions of the Philippine Sea and Eurasian tectonic plates.

Anthropologist F. Landa Jocano observes that while oceans are often imagined as separators, for Austronesians—the ancestors of Filipinos—they functioned as connectors.

Patterns of language spread support this claim. Islands separated by water yet facing one another often share a language, while regions of a single island divided by mountain ranges do not. The island of Negros, for example, is split by Mount Kanlaon: the side facing Iloilo across the sea speaks Ilonggo, while the side facing Cebu speaks Cebuano.

This familiarity with oceanic travel made Austronesians among the world's earliest master seafarers. Dating back to at least the fourth century CE, seaworthy balangay were built without nails and carried self-contained communities. Kith and kin alike, each voyage forced those aboard to become one another's lifelines. Kapwa—as if together on a small boat at sea—captures the idea that each person is inseparable from the others.

A culture so tightly knit also encourages the development of multiple skills. In 1993, Samaon Sulaiman received the prestigious National Living Treasures Award for his virtuosity on the *kudyapi,* a two-stringed, fretted, boat-shaped lute. Jocano observed that Sulaiman, a Maguindanaon from Mindanao, was more than a master of the instrument. He was also a religious leader serving as a Muslim Imam, a proficient farmer, and even a popular barber in his community. Jocano argues that in a community animated by kapwa, it would be stranger if someone excelled in only one craft. The many skills were simply different facets of the relationships possible within the community, any of which could be salient in a person's life.

Kapwa Mirrored in Other Philosophies

Declines in social connection and civic engagement correlate with poorer health and social outcomes. Where communities were once naturally intertwined ("it takes a village"), many today live in some of the least intergenerational societies on record, with social circles bounded by age and socioeconomic status. As a philosophy, kapwa is in contrast with the atomisation of modern life, and can be deeply nourishing and reparative.

One parallel appears in Narrative Exposure Therapy (NET), a therapeutic approach that moves from individual healing to collective healing. Participants construct a chronological "lifeline" of their lives, often using a rope with stones to mark traumas and flowers to mark positive events. As they narrate their story to the group, others listen. This act of "communal witnessing" can itself be transformative, framing personal suffering as part of the group's shared history of survival.

Not every traveller by boat is greeted by a barangay upon landfall—for example, refugees fleeing conflict zones by sea. Like NET, Community-Based Psychosocial Support (CBPS) goes beyond talk therapy to create shared, healing activities. In refugee camps, these can take the form of communal cooking, crafting circles for women, or, in Jordan's Zaatari refugee camp, circus arts and sports that give youths a platform to be seen by their community. Such practices foster social cohesion and allow informal support networks to bloom slowly, restoring a sense of normalcy through shared activity.

Displaced women at the Cathedral Collective Centre in Wau, South Sudan, who fled conflict and are now participating in an IOM Mental Health and Psychosocial Support programme. The group includes widows, mothers, young mothers, and survivors of gender-based violence learning sewing and craft skills while providing each other emotional support in their shared displacement.

As a torrent of AI enters various industries, including software for crisis response, kapwa reminds us that technology must remain conscientious of the needs of others. One project under the UK's NESTA and its Centre for Collective Intelligence Design illustrates this: the AI Safety Label, an independent assurance process functioning as a community trustmark for AI tools in the humanitarian sector. Its goal was to move beyond a purely technical audit and create a framework in which the social acceptability of an AI tool is determined by the people it is meant to serve.

To test this, the team went to Antakya, Türkiye, a city devastated by earthquakes in 2023. They focused on an Automated Damage Assessment (ADA) tool, an AI designed to quickly analyse satellite imagery.

In a series of deliberative workshops, the team engaged twenty-four residents, using simple animations to explain how the system worked, how fast it worked, and how it might make mistakes. In discussions, residents compared the tool's inaccuracies against the human-led process they had recently experienced. One participant noted that in large-scale disasters, human responders are deeply affected and can also become less accurate. Another participant, who had only primary school education, said they felt able to explain what AI is for the first time.

Residents share their opinions on Automated Damage Assessment (ADA), an AI tool developed by the Red Cross, used for disaster response after earthquakes in Antakya, Türkiye, in 2023.

Coda

These and other reflections did not automatically approve or reject the software. Instead, they were summarised into a user-friendly AI Safety Label, which accompanies a technical evaluation by the Red Cross. Especially in emerging uses of AI in crisis settings, technology must earn the trust of those it affects, particularly the most wounded and vulnerable. Kapwa reminds us that gathering collective intelligence also means gathering collective trust.

This principle of a journey taken together finds one of its most intimate expressions in the ordinary act of eating. Around the Filipino dining table, the culture of *salu-salo*, a meal shared together, lays out a rainbow of dishes across heaps of banana leaves. This connection between food and community may be rooted in Filipino folklore, which holds that one of the two human souls, the *Ginhawa*, resides in the belly.

As culinary historian Claude Tayag observes, Filipino cuisine has few recipes for a single serving. Food is meant to be shared, and *kamayan* is a celebratory feast where people gather. But kamayan also means to eat with your hands. In one's palm, the flavours—the crispy pata, the *lumpia*, the sweet *longganisa* pork sausage—become one.

Salu-salo, a Filipino term for a feast where people gather, bring food, and eat together with family and friends.

[9] KAPWA (UNITY OF SELF AND OTHERS)

LANGUAGE English

PROVENANCE Trauma studies; artistic interventions

[10]

Affective Crisis Response

At a Glance

Affective Crisis Response asks the Public Service to treat feelings, grief, fear, anger, and exhaustion as real features of crisis, not secondary issues to be handled after material recovery is complete. For Singapore, this could mean looking more carefully at how people emotionally experience disruptions such as pandemics, disasters, displacement, service failures, economic shocks, climate events, or traumatic incidents.

This is especially relevant for crisis communications, community recovery, public health, social services, memorialisation, frontline care, and trust repair. A technically sound response may still fail if people feel abandoned, unheard, blamed, or unable to make meaning of what happened.

Guiding Questions

- What signs would tell us that people have not accepted the official account or explanation for a difficult event?
- Whose experience of a difficult situation is least visible in our official measures, but most important for understanding whether recovery has been robust?
- What would help affected people feel that a difficult situation has been properly acknowledged, not merely operationally resolved?

Oscar Mairena's *Mango tree in front of the church* is inspired by community gospels in Nicaragua, in the 1970s, where priest and poet Ernesto Cardenal encouraged locals to interpret scripture during the Somoza dictatorship.

Emotions exist. Just as gravity cannot be wished away when building a structure, feelings cannot be pushed aside during recovery. To dismiss them as indulgence or sentimentality is to ignore their force as a meaning-making element of life. Affective crisis work asks, then, that feelings be taken seriously and made central—rather than peripheral—in any form of post-crisis repair.

Emotional realism

If feelings exist and matter, then tending to them becomes a practice of emotional realism.

At the RAND Corporation in the 1950s, on the eve of the Cold War, two groups designed simulations to anticipate nuclear escalation. One was built by the Mathematics Division (MD), the other by the Social Sciences Division (SSD). In both, tension between superpowers was rising.

While the premise was the same, the simulations' outcomes diverged sharply. In the mathematics-driven simulation, escalation was swift and inevitable. Guided by quantitative and probabilistic reasoning, players concluded that second strikes were unavoidable and launched nuclear war almost immediately.

By contrast, escalation stalled in the simulation developed by the SSD. The social scientists brought a sensitivity to suffering, imagining what it would mean to watch cities fall, diplomacy collapse, and catastrophic decisions explained to civilians. As political theorist John Emery

recounts, players were "uneasy and anxious", burdened by "a sense of crushing responsibility", and made moves beyond what the simulation formally allowed to avoid nuclear fallout at all costs. They refused to act as if mass civilian death were tolerable, even within an abstracted theatre of play.

The SSD simulation embodied emotional realism, incorporating affect, consequence, and the unbearable moral weight of escalation. This form of realism kept players grounded in context, preserving the obvious fact that death entails suffering—and that suffering cannot be dismissed as irrational or irrelevant, even in a simulation.

Emotional realism is essential when responding to catastrophes. After Fukushima's triple disaster—earthquake, tsunami, and nuclear meltdown—on 11 March 2011, communities in the Tōhoku region faced not only physical devastation but profound psychic dislocation.

Jun Kitazawa's *MyTown Market* is an art project to make a "handmade town" in temporary housing areas, where residents use colourful mats to recreate a town: with a library, town hall, cafe, baths, and more.

Official reconstruction focused on material recovery. Ethnographer Peter Wynn Kirby observes that this work was dominated by bureaucratic language of resilience and "decontamination" and failed to make room for the wrenching and ambiguous grief many felt after losing so many so suddenly. Where is everybody?

Are they dead? Are they alive, somewhere, waiting for rescue? The disaster exceeded all forecasts; nobody expected the torrent of black water—a mixture of uprooted trees, crushed buildings, oil, sewage, cars—to reach, in some places, ten storeys high. Economic and infrastructural restoration came, but psychic restoration did not.

Through these unaddressed wounds, ghosts arrived. In accounts collected by journalist Richard Lloyd Parry, survivors reported encounters with the departed. One young woman was said to have been possessed by as many as twenty-five spirits; one of them, a father who died searching for his daughter, believed he was still alive. The Buddhist priest who helped him move on described the ritual not as an exorcism, but as compassionate guidance. He was merely tending to a soul disoriented by its own death.

Kirby would describe these encounters as a "radiant (re) worlding", an improvised process by which people began to reconstruct meaning socially, spiritually, and immaterially. The hauntings were critical to recovery, and showed that what is "real" extends beyond the physical, objective, or technical.

The Sheer Difficulty of Confronting Traumas Big and Small

If emotional realism acknowledges the depth and salience of feelings, the next question is: what do we do with them? As we confront the consequences of leaving emotions unattended, we must also admit the sheer difficulty of tending to them.

In *The Inability to Mourn*, German-Jewish psychoanalysts Margarete and Alexander Mitscherlich argue that postwar German society could not initially process its guilt for its participation in fascism. "You can't mourn someone who has been declared a monster", writes philosopher Susan Neiman.

And yet, painfully, a reckoning began. The Eichmann trial in Jerusalem in 1961, broadcast globally, shocked Germans with testimony from Holocaust survivors. The Auschwitz trials in Frankfurt from 1963 to 1965, the first German-led prosecutions of camp staff, made the

public's complicity impossible to ignore. In the student movements of 1968, younger Germans demanded moral clarity from their elders.

Later, Germany developed *Vergangenheitsbewältigung*, a compound term that combines "past" (*Vergangenheit*) with "mastery" or "working through" (*bewältigen*), implying a commitment to work through the past rather than simply remembering it. Germany constructed both physical and psychic infrastructures of memory. Berlin is marked by more than 61,000 *Stolpersteine* ("stumbling stones"), brass plates embedded in sidewalks outside the former homes of Jews, Roma, and other deported groups; it is the world's largest decentralised monument. The Memorial to the Murdered Jews of Europe occupies the most prominent empty space in the capital. School curricula mandate Holocaust education, and national days of mourning recur every year on January 27 (Auschwitz liberation), May 8 (end of war), and November 9 (Kristallnacht).

Stolpersteine create daily encounters with difficult history, exemplifying Germany's commitment to working through collective trauma by integrating remembrance into ordinary life rather than segregating it into distant monuments.

The mourning, fraught with difficulty as it is, is imperfect. Asking "whose feelings matter", the scholar Adam Sutcliffe argued that Germany's Holocaust memory, while rigorous, has grown rigid. In its zeal to atone, the state often insisted on a singular moral script centred on redemptive empathy with Jewish suffering. That empathy, Sutcliffe warns, has sometimes crowded out other legitimate griefs: the pain of Palestinians, Black Germans, and victims of colonial violence. These challenges are not faced by Germany alone. The United States has not fully mourned slavery or empire; Britain has barely confronted the collapse of its imperial myth; and Japan remembers its own wartime suffering far more readily than its aggressions.

Germany's response is not perfect, but as Neiman describes, it offers a model of moral perseverance. The historian Dominick LaCapra offers useful distinctions between "acting out" and "working through." "Acting out" is the mere reliving of traumatic events, where "the past returns as if it were fully present, and there is no critical distance from it." By comparison, "working through" is a reflective, dialogic, and ongoing process of empathetic unsettlement, where the subject attempts to articulate and transform their relation to the trauma. If acting out is like being haunted by the past, then working through is like learning to live with the ghost.

Responding affectively to crisis is immensely difficult. It is not enough to feel nor merely to name the feeling, for it must also be held socially, politically, and ritually. Absent an emotional infrastructure to accommodate that memory, psychic hurt has nowhere else to go and calcifies into trauma. Keeping the process alive, then, entails knowing that emotions are precisely what must be addressed on the road to responsibility and repair.

Medical students practice interaction with a "standardised patient"—a trained actor portraying both medical symptoms and emotional responses—to develop bedside manners and communication skills.

[10] AFFECTIVE CRISIS RESPONSE

Snippets of Art, Care, Intervention

Despite the monumentality of feeling and crisis, many examples for tending to them already exist.

In an address on climate disputes, Singapore's Chief Justice Sundaresh Menon argued that traditional legal procedures are structurally ill-suited to the psychic and systemic harms produced by crises such as climate change. He proposed a model grounded in therapeutic justice, which reframes adjudication as a restorative and relational practice. In this model, emotional intelligence matters because feelings become material a court must work with, especially in cases of existential or environmental injury where harm is as much spiritual as it is material. A similar point appears in "The Aptness of Anger" where philosopher Amia Srinivasan challenges the idea that political anger should be dismissed as unproductive. She argues that the counter-productivity critique misses something essential: anger can be fitting, a form of "affective justice", regardless of its tactical utility.

In *Performance in Place of War*, James Thompson documents artists across war-affected regions who continued creating through siege, exile, and displacement. In the early 2000s, Thompson was invited by UNICEF to lead theatre workshops for youth in embattled Sri Lanka. "I'd been told there was no theatre in the war zone", he recalled. But what he found overturned the narrative, as a flourishing network of children's theatre companies, local dramatists, and university-led arts programmes awaited him. As bombs fell nearby, people said quite seriously, "We're doing *Julius Caesar*. Do you know where we can get a toga?"

Across Sri Lanka, Uganda, the DRC, and Colombia, Thompson found that theatre did not merely survive war; it adapted to it. What struck him most was not just its persistence, but the plurality of reasons for its existence. Variously, theatre could be a place to mourn, a form of resistance, a source of relief, and a ritual of familiarity.

Thompson argues that we must abandon the idea that crisis renders culture less relevant. Rather, crisis intensifies the need to express, to ritualise, and to make meaning in time, which makes culture evermore needed. His fieldwork counters assumptions embedded in Maslow's hierarchy of needs, where creativity and self-actualisation are at the pyramid's peak, seemingly meaningful only after safety, shelter, and food are secured. In reality, poetry appears on day one of resettlement; in many communities, art becomes the first line of repair. Care and creativity emerge simultaneously, not sequentially.

Syrian refugees perform acrobatics at Za'atri Refugee Camp in Jordan.

Affective responses can also be plain and low-cost. In the UK, and increasingly elsewhere, doctors have begun prescribing "community." Alongside medication, patients struggling with isolation, chronic illness, or exhaustion receive a social prescription, which could be a referral to a walking group, a community garden, a painting class, or a dance circle. The patient is re-embedded in a web of relationships with the world, with others, and with time. Such prescriptions have been helpful even for ailments typically viewed as purely physical, such as diabetes.

A knitting circle of formerly imprisoned men offers both recovery and integration.

Feminist thinkers have long insisted on this manner of holistic response. María Puig de la Bellacasa talks about care as emotional and embodied labour whose effort and mileage are often overlooked despite being acutely felt. When a mother washes a child's clothes, when trees are ritually planted in a fallout zone, when a neighbour checks in on an elder, or when anyone stages a play in a war zone, they create affective infrastructure that sustains possibility in places where life has become otherwise unbearable.

Coda

German philosopher Theodor Adorno subtitled his 1951 collection of aphorisms *Minima Moralia: Reflections from Damaged Life*, and he meant "damaged" literally. In his view, after fascism, exile, and genocide, the idea of a coherent and undamaged life had become morally and philosophically untenable. The world had been broken, and so had the subject. One could no longer write about ethics, beauty, or truth as if history had not happened.

For Adorno, the only honest position left was to step away from the fantasy of total repair, and write from within the fracture.

This is where affective crisis response must also begin. Importantly, Adorno did not believe that damaged life precludes meaning—on the contrary, meaning must be wrestled from damage. The modern subject, in his view, is marked by capitalism, conformity, violence, and the false promises of progress. In that case, to reflect on damage is not to succumb to despair, but to think about the injury with greater clarity.

Scholar Lauren Berlant describes emotion as a structure of attention, where emotion is not just a feeling, but a patterned way of noticing, interpreting, and prioritising in a world saturated with stimuli. If this is true, then the very things that wound us may also sharpen our attention.

As Adorno writes, "The splinter in your eye is the best magnifying glass."

[10] AFFECTIVE CRISIS RESPONSE

LANGUAGE English

PROVENANCE Complexity studies; organisational theory

[11]

Sidecasting

At a Glance

Sidecasting asks the Public Service to look again at what already exists before assuming that every problem requires a new programme. For Singapore, this could mean examining underused public spaces, ageing infrastructure, mature schemes, agency datasets, service touchpoints, schools, libraries, polyclinics, town councils, trusted community partners, or informal neighbourhood networks.

This is especially relevant where budgets, manpower, land, or public attention are constrained, and where issues such as ageing, climate adaptation, social isolation, or place-making may require recombining existing assets rather than inventing from scratch.

Guiding Questions

- What assets are currently treated as single-purpose?
- Which schemes, spaces, or relationships could serve a second function with modest redesign?
- Who on the ground already knows where the hidden capacity is?

El Ateneo Grand Splendid, once a prominent theatre in Buenos Aires, is now a bookshop, a form of sidecasting through adaptive reuse of buildings.

What Sidecasting Looks Like

Instead of forecasting (that looks into the future) or backcasting (that starts from a desirable future and works backwards to see how to get there from today), sidecasting looks at the present to see what else can be done with what we already have.

In evolutionary biology, exaptation describes cases where traits that developed for one function become adapted for another. For example, feathers now associated with flight were initially insulation for small theropod dinosaurs. As limbs grew longer and more complex, feathered limbs enabled gliding from trees (as seen in *Microraptor*), wing-assisted running on the ground (in *Archaeopteryx* and *Anchiornis*), and eventually flight.

The pattern of exaptation can occur wherever developments happen. In the fifteenth century, a wine press was modified into the first printing press. Rather than inventing a new device, Johannes Gutenberg adapted a machine used for pressing grapes into one for pressing ink onto paper. In the 1940s, engineer Percy Spencer noticed that a chocolate bar in his pocket melted when he stood near an active radar set. Curious, he wondered whether magnetrons had anything at all to do with heating things up, and placed popcorn kernels near them. They popped—and so, Spencer found a new way to cook. Soon after, the first microwave was born.

Some companies have given name and structure to this intentional openness to serendipitous exaptation. Nintendo's design philosophy is often described as "lateral thinking with withered technology", a phrase coined by designer Gunpei Yokoi, creator of the Game Boy in 1989. Yokoi once observed a bored salaryman on a train playing with a pocket calculator and was struck by how such a simple device could still offer entertainment.

This observation influenced Yokoi's design. Instead of choosing cutting-edge hardware, he selected the Sharp LR35902 processor (based on legacy 8-bit chips) and the monochrome LCD screen (found commonly in calculators and watches). These mature components allowed for low production cost, long battery life, and a familiar form factor that both consumers and developers intuitively understood. At its discontinuation in 2003, the Game Boy line—including the original Game Boy and the Game Boy Color—was the best-selling console of all time. Even now, as portable entertainment on phones is taken for granted, the cultural legacy of the Game Boy—once a sideways innovation—remains strong.

The original Game Boy released in 1989 used monochrome LCD screens which had been used for years in calculators and watches.

How Sidecasting Happens: Adjacent Possible, Real-Time Human Sensor Networks

To describe the new forms that emerge through recombinations of the present, the possibilities latent until noticed and acted upon, Stuart Kauffman coined the phrase "the adjacent possible." Dave Snowden adds that in complex systems, emergent patterns cannot be engineered in advance but can be supported through continuous responsiveness. Unlike engineered systems that can be precisely modelled, "anthro-complexity" is shaped by meaning, identity, narrative, and intention. Therefore, we need not only models but also what Snowden calls "real-time human sensor networks": people embedded in place, sensitive to small shifts, and attuned to context.

One example in practice is Asset-Based Community Development (ABCD). Pioneered by John McKnight and Jody Kretzmann, ABCD flips the instinct of social service providers: from diagnosing and solving a community's problems to recognising and enabling the strengths the community already has, be they skill or kinship. In Baltimore, the Algebra Project has for more than forty years used mathematics as a form of grassroots empowerment. Founded by civil rights activist and math educator Bob Moses, the project trained high school students to become peer instructors, turning classrooms into collaborative learning hubs and challenging traditional teacher–student hierarchies. Beyond improving math scores, it built confidence and leadership in communities often underserved by formal education systems.

Another experiment in creating thoughtful social frameworks around emerging technology is The Call, an AI-choir project by Holly Herndon and Mat Dryhurst. Developed with Serpentine Arts Technologies in London, The Call functioned as both an immersive art installation and a prototype for consent-driven AI. Its machine-learning cycle from dataset design to deployment was made visible, data was gathered in small batches rather than scraped at scale, and human contributors had a say in how their material would be used.

Encountering the installation feels like partaking in a communal ritual. Visitors enter a chapel-like space with acoustic panels, hanging hymnals, and a participatory oratory where anyone could sing into a microphone and hear an AI-generated choral response. Sound emanates from towering columns of custom-built speakers, layering human input with model output to braid an atmosphere of call-and-response.

The walls in the installation *The Call* are lined with servers housed in cabinets in the style of religious iconography, transforming the process of training AI into an artistic and sacred ritual.

The project also introduced a new legal tool: the Choral Public License (CPL), a rights structure that allows contributors to define how their voices can be used and with whom. Unlike conventional licenses, the CPL supports revocability, conditional terms (such as non-commercial use), and clear language for non-experts. The legal framework itself was co-developed with choir participants through workshops and consultations. Governance was managed through a Data Trust, a shared structure that enabled artists and choirs to negotiate access, retention, and ethics in advance. Through this social, sideways, and sensitive experiment, Herndon and Dryhurst challenge the false binary of needing to choose sides between humans or machines, and offer a vision of a third path that is pro-consent and pro-AI.

Animals and nature also form real-time sensor networks that sense and respond to what their biomes need. In the Brdy region of the Czech Republic, a long-stalled

government flood-control project had planned to build a conventional dam. But when eight beavers appeared and began constructing a natural wetland, the dams they instinctively built began fulfilling many of the goals around retaining water, restoring biodiversity, and slowing runoff.

A beaver dam blocking dirty water after a heavy rainstorm.

Beavers, it turns out, are keystone species which exert a disproportionately large effect on their ecosystems. When local officials saw what the beavers made, they cancelled the planned project to let the beavers continue. In this adjacent possible, beavers were left to do what they do best, and by 2024 had saved the government over $1.2 million in avoided construction costs.

Inner Habits That Enable Sidecasting

Identifying possibilities that are latent but overlooked requires certain habits of mind. It takes keen attention to notice what is actually there, and a capaciousness to interpret what is noticed with range.

Ageing is often framed as decline, but sidecasting invites us to ask how else it can be seen, if we choose. In cities like Beijing, "elder universities" and community education centres are drawing millions of retirees into classes ranging from yoga and dance to smartphone photography and traditional Chinese painting.

But it is not only the elderly who are enrolling. As tuition prices for commercial classes in cities like Beijing continue to rise, younger adults have begun signing up for elder university programmes as a budget-friendly

alternative. At the Open University for the Elderly in Dongcheng District, classes can cost a tenth of those outside and offer a wide range of courses, from ballet to oil painting to Chinese folk dance.

With China's number of people aged sixty and above projected to exceed 400 million by 2035, the State Council has set a goal of establishing at least one university for senior citizens in every county-level region by 2025. While most of these elderly universities maintain a strict minimum age of fifty, some have opened their doors to younger participants to meet enrolment quotas and sustain their classes. A reframing set off a chain of improvisation: first, recognising seniors' ongoing desire for growth led to the schools being built, which then drew in citizens of other ages, which turned the universities from elderly-only spaces into intergenerational commons. Acting well under seeming constraints requires not only information but also humility and courage, to hold faith in the value of what might appear to be boring or trodden ground.

Cemeteries may appear to have a singular function, yet if we look more closely, they can be many things at once. Vienna's Zentralfriedhof (Central Cemetery) is where Beethoven, Schubert, and Brahms are buried. But Europe's second-largest cemetery has also become a zone of rich urban biodiversity, with over 240 plant and animal species documented including endangered species protected by the EU Habitats Directive, such as the European green toad, the Alpine longhorn beetle, and the European ground squirrel. As green spaces are disrupted by human activity, the cemetery becomes a stepping stone habitat for animals moving between the city's ecosystems.

Much of this biodiversity has been cultivated through restraint, through simple acts of not mowing everything down, as one gardener explained. Avoiding full-scale lawn maintenance has allowed meadows to emerge, offering habitat for insects, birds, and endangered mammals like the European hamster, whose burrowing mounds dot the cemetery. There are still parts of the cemetery that are manicured, reflecting some visitors' expectations of what a cared-for cemetery looks like. Those, too, are part of the cemetery's habitat mosaic, which altogether holds both biodiversity and memory as the city grows around it.

Coda

Anthropologist Claude Lévi-Strauss described bricolage as "making do with whatever is at hand." The bricoleur does not plan from scratch or chase novelty; they work with what is already available, improvising meaning and function as they go. Organisational theorist Karl Weick, in analysing the 1949 Mann Gulch disaster where fifteen smokejumpers were trapped in a wildfire and only three survived, came to see bricolage as an instinct for survival.

Those who could recombine tools, stories, or strategies in the moment—dropping heavy gear, adapting paths midrun—were more likely to escape. In conditions of ambiguity, those attuned to their capacities, constraints, and contexts have the best chances of acting well.

Sidecasting draws from this logic and perhaps extends it, in that it is not only humans who can make do with what is at hand but also animals, landscapes, and even technologies already created. Each time what is old is made different, adjacent possibilities are charted through whoever and whatever we choose to re-examine, respect, and relate to.

Roe deer in Vienna's Zentralfriedhof (Central Cemetery).

LANGUAGE Malay

PROVENANCE Minangkabau cultural tradition; anthropology of migration and identity

[12]

Merantau

(To Wander From Home)

At a Glance

Merantau asks the Public Service to see movement not only as disruption, but as a source of learning, adaptation, and obligation. For Singapore, this could mean looking more carefully at how people, ideas, practices, and capabilities travel across agencies, communities, countries, and life stages, and how they are changed by each place they enter.

This is especially relevant for talent development, overseas exposure, inter-agency rotations, migration, diaspora networks, international partnerships, and policy learning from abroad. The question is not only what Singapore can import, but how ideas are adapted, rooted, and made to respond to local context.

Guiding Questions

- What do people or ideas learn by leaving their original setting, and how do we help them translate what they have learnt?
- Where are we treating "home" as fixed, when it may be something continually built through movement and return?
- How might we gain exposure beyond institutional boundaries and encourage more cross-domain immersion?

Merantau is a socio-cultural tradition of wandering, originating from the Minangkabau living in the highlands of West Sumatra, Indonesia. Done mainly by Minangkabau males, to merantau is to voluntarily leave one's village—to journey into the *rantau,* the world outside the Minangkabau homeland—with the intention of returning.

Under the Minangkabau customary law, ancestral property and lineage are passed through the females in the family. For males, it is through merantau that they build their fortunes and fulfil their roles. A Minangkabau proverb goes: "*Karatau madang di hulu, Babuah babungo balun, Marantau Bujang dahulu, Di rumah baguno balun*." The tree upstream has yet to fruit or flower; it is better for a young man to wander, for at home he is not yet useful.

The rumah gadang, a Minangkabau rumah adat or ancestral house, belongs to women, who inherit property through the maternal line. Men leave through merantau, working afar and sending remittances home to sustain and expand these matrilineal houses across generations.

Merantau then is a rite of passage for developing one's character and resourcefulness, as by wandering one learns to adapt and thrive even amongst other ways of life. As a start, Minangkabau philosophy encourages those beginning their journeys to seek an *induk semang*, or a foster parent, who acts as a mentor and patron. Minangkabau migrants often work as traders or tailors, professions in which they gain both employment and apprenticeship, to learn the tools of the trade before establishing their own businesses.

Merantau challenges the idea of "home" as fixed and static, as wandering weaves thick webs of relationships both at

home and beyond. In the tradition, home is constantly built and rebuilt through a dialectic of departure and return, in a circular flow between the *kampung halaman* (homeland) and the *rantau* (outside world). It is in fact a Minangkabau man, Zubir Said, who during his wanderings from his home gifted Singapore with so many pieces of music, not least amongst which is Singapore's national anthem, *Majulah Singapura*.

Zubir Said, on the piano with actress Saloma, was also an arranger and songwriter with Cathay Organisation's Keris Film Productions, and a key contributor in the golden era of Singapore cinema.

Travelling Concepts

Ideas, like people, can also wander. Cultural theorist Mieke Bal proposed the notion of "travelling concepts" to describe the phenomenon. As if undergoing merantau, concepts can meander across disciplines, historical periods, and academic communities.

For example, the concept of "performativity" began its journey in the philosophy of language in the mid-twentieth century. Philosopher J. L. Austin, in his posthumously published *How to Do Things with Words*, coined the term "performative utterances" for statements that do not only describe a reality ("such as the cat is on the mat") but actively create it. For example, "I apologise" once uttered enacts the apology, and "I declare you married", if pronounced under the right conditions, forges a new social reality.

Judith Butler, feminist theorist and philosopher, was inspired by Austin's concept of "performativity." She

thought it had implications beyond linguistics, and extended it from a theory of speech acts into gender and identity. Butler notes how gender is not something stable and internal, but constituted through outward-facing performances: that is, our ideas of gender are shaped through what we do, say, and compel others to be. "Girls wear pink", "boys don't cry", and other norms are uttered and enforced so commonly that they are easily mistaken for and internalised as "natural"—despite actually being a "stylised repetition of acts."

Ideas around "performativity", and the many versions it embodied in its travel, became instrumental for understanding the constructed and contingent nature of our social world. Concepts, too, possess their own dynamic lives. As concepts wander, both they and their destinations are changed.

Victorian male friendship often involved physical affection that might seem unusual today, yet such closeness was entirely normal at the time. The photograph reminds us that ideas of gender change over time. As Judith Butler argues, gender is performed through everyday gestures, and those performances shape what each era sees as normal.

Tidalectics

Beyond points of departure and arrival, Barbadian poet and historian Kamau Brathwaite urges us to consider the spaces in between. Specifically, his concept of "tidalectics" treats the ocean itself as an active force, not just an inert expanse to be crossed during travel from one landmass to another. "Tidalectics" was meant

to directly challenge the dominant model of Western historical thought, the Hegelian dialectic. Moving through a sequence of thesis, antithesis, and synthesis, the model of the dialectic assumes a linear and progressive march forward where conflict is resolved, and the past overcome as we reach newer and higher forms of unity.

John Akomfrah's *Vertigo Sea* (2015) combines archival and cinematic footage of migration, slavery, and whaling. It explores humans' relationships with the sea, which has been used to support exploration and exploitation.

For Brathwaite, the simple structure of the Hegelian dialectic felt utterly inadequate for describing the Caribbean experience. From the sixteenth to the early twentieth century, for the millions of Africans forcibly shipped in the transatlantic slave trade, the North Atlantic Ocean between the African continent and the Americas was a violent space that transformed bodies into slaves, likely for generations. During this Middle Passage, so named because it was the middle step of a triangular route around the slave trade, the ocean became the very architecture enabling the institution of slavery, estimated to have claimed four million lives.

To Caribbean thinkers and their diaspora, "the sea is History." In that view, the ocean is not just a passive and transitory void between terrestrial sites of interest, but is in itself a dynamic and constitutive force. The trauma of the Middle Passage is an undertow that continues

shaping the present, a mighty and irresolvable tension in the ocean we cannot pretend away.

Egg capsules laid by a marine snail among algae and rock in the intertidal zone, a habitat shaped by constant exposure to changing tides, temperature, and salinity.

Through its labour of reviewing tragedy, tidalectics replaces the straight arrow of Hegelian dialectic with a metaphor both more sober and more enchanting: the rhythm of the ocean tide. The tide engages in a perpetual rhythm of interaction and "slight misduplications", and never returns exactly the same. In a "geopoetic model of history", the past is not a stage that can be superseded but a constant presence entangled within the now. The tide is both ceaseless and non-progressive: it ebbs and flows, advances and recedes, washes over the shore and pulls back—sometimes for worse but, in its "misduplications", possibly for better too.

Closing

In 1959, Zubir Said was asked if a song he recently made, which was already popular, could become Singapore's national anthem. The request came shortly after Singapore held her first general elections in the same year. A song was needed to foster a new sense of belonging, and Zubir Said was asked if his composition could be that song.

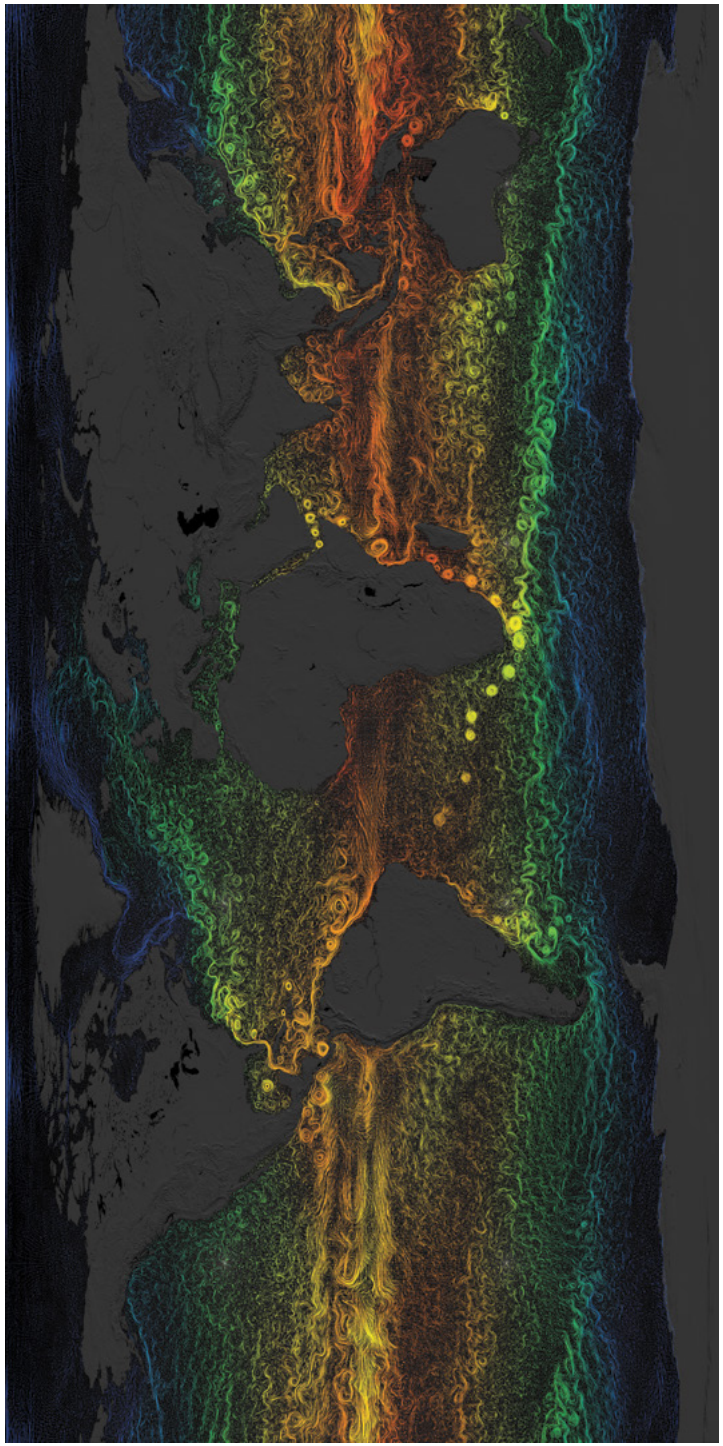
When asked to describe his philosophy for the anthem, Said cited the Malay proverb "*Di mana bumi dipijak, di situ langit dijunjung.*" Wherever one is living, adapt to and appreciate their local traditions. It is wisdom that

[12] MERANTAU (TO WANDER FROM HOME)

applies to both Said and Singapore, his adopted country, one in the midst of merantau and the other newly self-governing, both of whom now bear the responsibility of forging a sense of belonging. In that light, merantau is not focused solely on departure and return, but on a mobile sense of obligation and the spirit of making a home regardless of place and circumstance.

A world of ceaseless flows—of capital, people, information, and ecological change—is better understood through metaphors of motion. Merantau tells us that neither home nor self are fixed; "travelling concepts" shows how our frameworks for understanding the world are themselves on a journey; and tidalectics outlines the true face of our ocean-like, ebb-and-flow present.

A Minangkabau philosophy goes: "*alam takambang menjadi guru*." Let the world's expanse be the teacher. One of its lessons is that fluidity shapes the world. As students, we are asked to learn a new literacy that is attuned to rhythm, flow, and transformation. As we wander, we are encouraged to be curious and wide-eyed to the possibilities of context, constraints, and conclusions being reshaped.



A visualization showing global surface currents coloured by temperature. The data reveal how narrow eddies and major currents transport heat and carbon across the oceans, linking climate, geography, and life itself.

[12] MERANTAU (TO WANDER FROM HOME)

LANGUAGE Japanese

PROVENANCE Edo-period Japanese aesthetics; Zen-influenced material culture

[13]

引き算の美学

Hikizan no Bigaku (Philosophy of Subtraction)

At a Glance

The Philosophy of Subtraction asks the Public Service to consider what should be removed, reduced, deprioritised, or left alone so that what matters can become clearer. For Singapore, this could mean looking at where policies, services, forms, reporting requirements, approvals, digital interfaces, or organisational processes have accumulated layers that obscure their original purpose. The intent is to avoid policy drag and fragmentation especially as complexity accumulates.

This is especially relevant for service delivery, regulation, digital government, organisational transformation, citizen communications, and public-sector productivity. Subtraction is not the same as cutting for its own sake; it is an act of care, requiring judgement about what is essential, what is noise, and what should be preserved.

Guiding Questions

- What burden, step, rule, or message could be removed without weakening the policy's purpose?
- Where has adding more become a substitute for deciding what matters?
- What would citizens or officers notice more clearly if we created space instead of adding another layer?

The Japanese philosophy of *hikizan no bigaku*, or the philosophy of subtraction, strips away non-essentials so that a "true essence" can emerge. It draws on the concept of *mu* (無), often translated as "nothingness" or "emptiness"; not a void, but an absence of clutter that brings clarity. It also draws on *ma* (間), which refers to a gap or negative space: the silence between musical notes that gives a melody shape, or the unpainted space on a scroll that gives its subject breadth and depth.

Once non-essentials are removed, an item's true essence or *nyoze* (如是), can be revealed. This is an object's pure state in the present moment, independent of the labels and judgements our minds impose.

Hasegawa Tōhaku's 16th-century masterpiece *Shōrin-zu byōbu* (Pine Trees) uses black ink washes on a six-panel folding screen to depict a view of Japanese pine trees in the mist.

A simple example is how a bowl is made. As a potter scoops out clay, they not only form the vessel's shape but also give it its function. The bowl can contain objects only because of the "emptiness" carved out where clay has been removed. Through subtraction, the bowl's essence becomes manifest.

The philosophy of subtraction appears in many of Japan's cultural traditions. Early Shinto shrines such as the Ise Grand Shrine are rebuilt every twenty years so they remain pristine structures of cypress wood, unadorned and in harmony with surrounding forests. In kaiseki cuisine, minimal sauces or spices are used to foreground the inherent flavour of each ingredient, and ingredients are chosen for their freshness and seasonality. In the sixteenth century, tea master Sen no Rikyū broke away from ornate and ceremonial tea gatherings elsewhere and pared the Japanese tea ceremony to what he saw as essential: small and rustic teahouses with low entrances,

minimal utensils and gestures, and hand-moulded raku bowls valued for their imperfections.

In the twentieth century, as Japan modernised rapidly after the Meiji Restoration, thinkers like Kakuzō Okakura sought to articulate what was crucial to preserve in Japan's indigenous worldview. In *The Book of Tea*, he writes that the essence of a teacup is not its price or history, but the immediate and fleeting experience of its warmth and texture in one's hands. The tea room is to be an abode of vacancy intentionally simple to sharpen appreciation for what is already present.

White raku teabowl *Fuji-san* by Hon'ami Kōetsu, Edo period, 17th century. Raku bowls, developed by Sen no Rikyū and Chōjirō, are hand-moulded vessels traditionally made from red or black clay and passed down through generations.

Curator, Cura, "To Care"

In what spirit should subtraction be done?

The philosophy of subtraction is an act of choosing what stays and what does not—an act that resembles what curators do. Whether selecting artworks, programs, speakers, or even a buffet spread, the notion of "curating" is very commonly invoked today. What is easily lost, however, is the essence embodied in the root of the word "curator": the Latin *cura*, meaning "to care."

In ancient Rome, anyone responsible for public works could be called a curator. A *curator aquarum* oversaw aqueducts and ensured the flow of clean water. *Curatores viarum* oversaw roads, and others oversaw public buildings and sanitation. In the Middle Ages, *cura* acquired a spiritual meaning. A *curatus* was a parish priest, a caretaker of souls responsible for the spiritual well-being of a congregation. What these diverse roles share is the spirit of *cura*, the skilful management of whatever or whomever is under one's care.

Only during the Renaissance did "curator" become closely associated with the arts. As private collections grew, so

did the need for expertise in managing, maintaining, and interpreting them. *Cura* expanded from caring for public works to caring for cultural works.

Curators today, when working with artists, ensure that works are made authentically and presented meaningfully. When working on exhibitions, curators become storytellers who shape our understanding of history, art, and the world around us. In museums, curators determine how collections align with what the institution—or even the nation or region—wants to say.

Visitors examine an installation during the 2017 Revelations: Art from the African American South exhibition at the Fine Arts Museums of San Francisco, which showcased the museum's historic acquisition of works by self-taught Black artists.

Regardless of what is being curated, whenever we decide to include or exclude, we should recall what the root of curation entails. It is one of care and commitment to stewardship, an ethical responsibility for the public life that curated works have as they move through the world.

No Such Thing as Silence

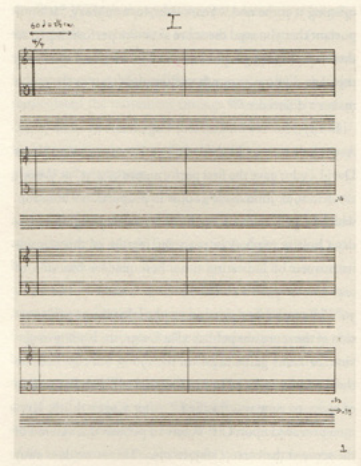
On August 29, 1952, John Cage premiered his new work, *4'33"*, at Maverick Concert Hall in Woodstock, New York. The audience, anticipating a conventional piano recital, would soon be met with a radical—and for many bewildering—performance.

David Tudor, a longtime collaborator of Cage, walked onto the stage, sat at the piano, and began the piece not by striking the keys but by closing the keyboard lid. The debut version of *4'33"* had three movements and the first lasted 33 seconds. Tudor looked at a stopwatch, and after 33 seconds had elapsed, opened the lid. He then closed it again to begin the second movement. Two minutes and forty seconds later, he opened it. He closed it once more for the third movement, and after one minute and twenty seconds, opened the lid for the final time.

[13] 引き算の美学（PHILOSOPHY OF SUBTRACTION）

Four minutes and thirty-three seconds had passed, during which not a single note had been played. Tudor stood up, faced the audience, bowed, and left.

A common misconception is that *4'33"* is about silence, although its point is the opposite. By withholding the piano's sound, the piece directed attention to every other sound that exists: the rustle of trees in the breeze, the patter of rain on the roof, the crinkle of program notes as people grew impatient, and the thump-thump-thumping of footsteps of those who left midway befuddled. The opening and closing of the lid served as visual markers of time, bookending a period in which the audience was invited to hear the incidental sounds that emanate regardless of what notes are played—or not played.



The score for John Cage's *4'33"*, as reproduced by pianist David Tudor.

Cage's belief in ever-present sound was shaped by a visit to an anechoic chamber at Harvard University. Padded wall-to-wall with sound wave-absorbing materials, such as fibreglass or foam wedges, anechoic rooms are designed to be as close to silent as possible. Yet, even in a space meant to emulate a sonic vacuum, Cage heard two sounds: the high whine of his nervous system, and the low thrum of his blood circulating. The experience convinced him that sound is an omnipresent aspect of life. *4'33"* is neither about nothing nor silence because, as Cage realised, there is no such thing as silence.

Coda

Cage was one among many who challenged the bounds of Western music. Composers before and after him—Wagner, Debussy, Russolo, Schoenberg, Boulez, Stockhausen—sought to unmoor Western music from the diatonic scale and the musical staff, questioning the premise that some sounds are inherently more musical than others, or that sound must be made or notated in particular ways. Influenced by Zen Buddhism and the I Ching, Cage helped usher in an embrace of change and indeterminacy. *4'33"* relinquishes control over content, yet remains grounded in the intention to create a space for hearing everything else more closely.

The philosophy of subtraction is often conflated with minimalism, but it is better understood as an approach to the manifold: to all things that, in their own time, have their place and their purpose. Its influence can be found across agriculture (Masanobu Fukuoka's "do-nothing" farming, which avoids ploughing and chemicals); economics (E. F. Schumacher's Small Is Beautiful, which critiques endless growth in favour of human-scale systems); manufacturing (the Toyota Production System's focus on eliminating muda, or waste); and technology (hardware and software that limit features in the service of usability and security). When piano keys remain untouched, our attention is freed to notice the hum of electricity, the shuffling of a restless child in the front row, and the laboured breathing of someone beside us. At times, without the impulse to add or control, life reveals itself to be more teeming with possibility.

Aigamo farming is a traditional Japanese organic rice cultivation method that uses ducks to naturally control pests, weeds, and provide fertiliser in rice paddies, eliminating the need for chemicals or pesticides.

[13] 引き算の美学（PHILOSOPHY OF SUBTRACTION）

LANGUAGE English

PROVENANCE Anthropology of encounter; organisational psychology

[14]

Generative Friction

At a Glance

Generative Friction asks the Public Service to distinguish between friction that blocks progress and friction that produces better judgement, stronger relationships, or more realistic implementation. For Singapore, this could mean looking more carefully at where disagreement, inconvenience, ground feedback, professional challenge, or inter-agency tension should be worked through rather than smoothed away too quickly in pursuit of premature "alignment."

This is especially relevant for complex implementation, public engagement, cross-agency coordination, crisis response, technology deployment, and policies that affect different groups unevenly. Some friction may signal poor design; some may reveal knowledge that the system needs in order to act wisely.

Guiding Questions

- What is the resistance revealing: unnecessary bureaucracy, or a real problem with trust, feasibility, fairness, ownership, or ground conditions?
- Where has convenience weakened accountability, care, or understanding?
- What space, process, or relationship is needed for agencies, partners, or communities to work through this disagreement productively?

Paleolithic paintings at Lascaux, France, created about 17,000 years ago with pigments ground from minerals and rubbed onto the cave wall. The image shows a form of making that began with contact, pressure and friction between materials.

Generative friction is the idea that disagreement, struggle, and misfit are not always problems to be ironed out, but have catalytic force worth maintaining. For example, anthropologist Anna Tsing notes that when two sticks are rubbed together, it is the friction between them that ignites a flame. It is also the friction between the road and tyres of a car that allows the vehicle to move. If the wheels were to spin in the air—without contact and friction with the road—the car would go nowhere.

Generative Friction in Nepal's Post-Earthquake Reconstruction

The 2015 Gorkha earthquake was one of the worst disasters in Nepal's modern history. On 25 April, a magnitude-7.8 quake, followed two weeks later by a major aftershock, killed nearly 9,000 people and damaged more than 800,000 houses. Over US$4.1 billion in aid was pledged, prompting the government to establish the National Reconstruction Authority (NRA) to coordinate recovery and manage housing grants. Working with UNDP, the World Bank, and other donors, the NRA adopted an Owner-Driven Housing Reconstruction (ODHR) model that placed households in charge of rebuilding. Grants of NPR 300,000 (about US$2,500) were disbursed in three tranches after inspection.

Reconstruction was difficult, and friction appeared at nearly every stage. The NRA's new resource centres overlapped with existing municipal offices, sidelining

local officials and slowing implementation. Grant tranches were tied to inspection, but official damage assessments took many months to complete. Eligibility rules required pre-earthquake *lalpurja* (land-ownership certificates), even though occupancy and ownership in many communities followed lineage and reciprocity rather than formal deeds. Affected areas were also home to vernacular building traditions such as timber bands, joinery techniques, and spatial customs revolving around an open courtyard (*aangan*), none of which appeared in the NRA's first catalogue of approved designs.

Despite these contradictions, reconstruction showed how friction can bring progress and innovation, especially when mediated well. UNDP deployed socio-technical facilitation teams that worked directly with beneficiaries, linking government finance with local practice and helping families navigate paperwork, banking, and inspections. In Machhegaun and Thecho, the NGO Lumanti Support Group for Shelter asked residents to form users' committees that managed planning, waste, land disputes, and liaison with the NRA. Through participatory mapping, Lumanti's architects helped residents pool irregular plots to satisfy new bylaws on minimum lot sizes without displacing neighbours.

Other organisations worked with the friction between traditional architecture and engineering. In Pilachhen (Lalitpur), the Maya Foundation helped residents restore the town's Newar character by combining traditional brick façades and lattice windows with reinforced concrete cores. Across rural districts, the National Society for Earthquake Technology (NSET) launched the *Baliyo Ghar*, or "Strong House", programme, providing on-site training for masons and homeowners. About 1,600 artisans learned safer construction methods such as ring beams, confinement bands, and lighter upper floors, creating a skilled workforce that continued to build resilient homes long after the NRA's mandate ended. Responding to feedback from the field, the NRA released a revised

2017 catalogue with 17 designs and two manuals for correction and retrofitting, embedding lessons from practice into policy.

An 80-year-old stone-in mortar house in Syangja, which survived several major earthquakes, stands alongside a newer home built with post-2015 seismic improvements.

By 2023, the combined approach produced measurable results. In Gorkha District alone, 26,912 houses were rebuilt, supporting roughly 124,000 people and improving overall structural integrity, services, and community infrastructure. Nationwide, more than one million households were surveyed, over 850,000 were certified as beneficiaries, and roughly three-quarters completed reconstruction.

Nepal's reconstruction demonstrated how friction can be made generative, especially when central directives meet improvisation on the ground, international expertise engages vernacular craft, and when stakeholders rebuild not only houses but also the relational aspects of administration and adaptation. While scholars have since observed continuing frictions between notions of "household", "house", and "home", those too offer

A mobile technical team in rural Nepal shares earthquake-resilient construction guidance with homeowners as part of the post-2015 reconstruction effort. Such outreach supported owner-driven rebuilding, helping families understand safer building techniques and meet seismic standards across dispersed and hard-to-reach communities.

valuable insights for future crises, as communities and organisations better themselves for complex and continuing reconstruction efforts to come.

What is Lost without Friction

Instead of fixating on the wear-and-tear friction causes, we can also consider the perils of smoothing it away. Frictionlessness entails "smoothness", a term that Korean-German philosopher Byung-Chul Han uses as the basis for his critique of digital capitalism. He observes how pervasive the aesthetics and sensation of "smoothness" has become: from the curved edges of our smartphones, to hair-removal treatments, to the gleam of our metallic cityscapes. Han notes how inane these objects can be: without friction, everything—be it meaning, intent, effort, or attention—slides off a surface.

For Han, the smartphone is smoothness par excellence. Its surface conveys a lack of resistance; its touchscreen interface makes everything seem tame and obliging, available at the flick of a finger, reinforcing a sense of self-referentiality where the world must conform to our desires. Technology writer Tim Wu argues that seamlessness can make for a tyranny of convenience, where the relentless pursuit for an easier life paradoxically diminishes human experience. Social media may provide a convenient way to manage social ties, but that convenience comes at the cost of crunching human expression into a handful of "reaction"

widgets and designing interfaces that, by being accessible, are also addictive.

This addiction to convenience erodes our capacity for work that is difficult but essential. From the biblical injunction to "carry each other's burdens" to the 1960s hit "He Ain't Heavy, He's My Brother", it seems that caring necessarily entails inconvenience—and thus cannot be separated from friction and discomfort.

In *Touch Sanitation*, performance artist Mierle Laderman Ukeles travelled across New York City to meet and thank every sanitation worker. The project highlighted maintenance labour as civic care and made visible the workers who sustain urban life.

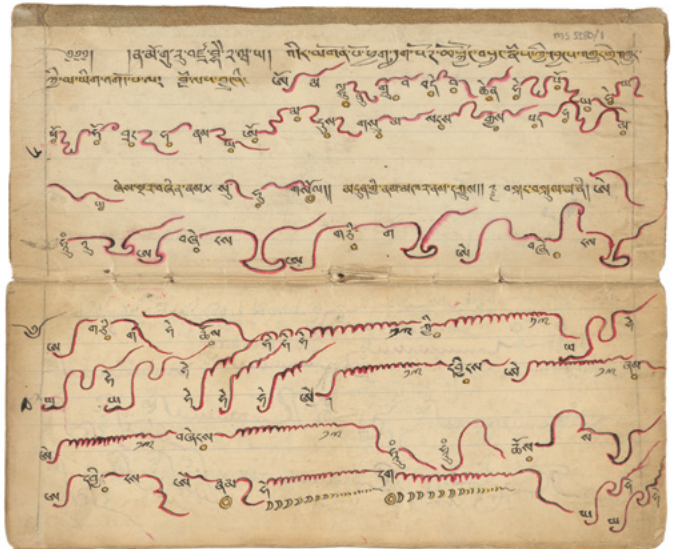
On a societal level, economist Thomas Schelling demonstrated how mild individual reservations against being in a minority can accumulate into entrenched urban segregation, hardened by the sum total of everyone's soft but shared desire. The only counter is to go beyond mere tolerance, towards the active pursuit of diversity and, as historian Donna Haraway puts it, to "stay with the trouble."

Generative friction, then, is also a call to reconsider our addiction to smoothness and convenience. After all, without the countervailing grit of friction—in inconvenience, labour, and even negativity—the value of experience, joy, and meaning loses its force.

Friction in Music

In music, when dissonance is used as part of a musician's vocabulary, we get a sensory experience of what generative friction can feel like. For instance, "blue notes" in jazz music are notes played *just* a few microtones away from the Western musical scale,

generating a tension that makes the genre so expressive. Much as painters use the many shades of a colour, so can musicians use the many shades of one note—and blue notes, amongst other pitch-bending techniques, are attempts to expand the sonic palette beyond what the scale prescribes.



A Tibetan *yang-yig* (chant) manuscript, featuring sinuous red and black notation lines tracing melodic rises and falls.

Entire music traditions are built on the unique textures that microtonal variations bring. In Balinese Gamelan ensembles, pairs of instruments are deliberately tuned to be misaligned: one instrument is pitched slightly higher (*pengisep*, "one who inhales") and the other lower (*pengumbang*, "one who exhales"). The sum effect of the deviation is a phenomenon called acoustic "beating", where misalignments of only a few hertz are large enough to be felt yet small enough to still sound like one note.

The phenomenon is part physics and part psychoacoustics, which is the study of how our bodies perceive sound.

While there is an infinite number of pitches in our audible sonic band (just as there is an infinite number of colours in the visible light spectrum), the ear's cochlea's basilar membrane groups that infinity into finite buckets known as "critical bands." So, despite the reality of there

being two frequencies (played by pairs of misaligned instruments), they are close enough to fall within the same critical band and thus perceived, by the brain, to be of one pitch. It is this friction between the physics and psychoacoustics of sound that gives Gamelan music its shimmering and *ombak* (wave-like) quality, a perpetual undulation felt from trying to square the paradox of the body perceiving one pitch, despite the acoustic reality of there being two.

Coda

In dreams of robotics and automation, humans often appear as the biggest source of friction, and precisely what many systems aim to eliminate.

As before, we should remember when friction, such as in the form of human oversight, was what proved essential. At the height of the Cold War, a high-level alert was triggered when U.S. early-warning radar detected what appeared to be a massive Soviet bomber fleet. A human officer examined the signal more closely and discovered that the "enemy" was, in fact, a flock of geese. On another occasion, nuclear false alarms were triggered by what turned out to be a rising moon over Greenland and sunlight glinting off clouds over Siberia, a clarification which came only after human examination.

Humans need not be the only source of meaningful friction, but in each of those cases, crisis was averted because human oversight, the friction in the loop, intervened. Automation and smoothness might have led the world barrelling towards escalation unimpeded. At that point, we might wish for brakes to appear—and discover that brakes, too, require friction to work.

LANGUAGE Hebrew

PROVENANCE Rabbinic Judaism

[15]

מחלוקת לשם שמיים

Machloket l'shem Shamayim (Argument for the Sake of Heaven)

At a Glance

Argument for the Sake of Heaven asks the Public Service to treat disagreement as a disciplined search for better judgement, not as disloyalty, obstruction, or performance. For Singapore, this could mean strengthening spaces where agencies, professions, communities, and leaders can test opposing views seriously before decisions are made.

This is especially relevant for contested policies, trade-offs across domains, long-term planning, regulation, resource allocation, and issues where no agency sees the whole picture. The point is not to encourage endless debate, but to ensure that disagreement is structured, fair, and oriented towards the public good.

Guiding Questions

- Have we understood the strongest version of the opposing view, not its straw man version?
- How can we make it easier for agencies, partners, or stakeholders to revise their positions without feeling blamed, embarrassed, or defeated?
- At what points should proposals be challenged before the plan becomes too path-dependent to change?

Carl Schleicher's *Eine Streitfrage aus dem Talmud* shows Jewish scholars in animated debate, with Hebrew text on the wall and books in the room.

In Jewish thought, the concept of machloket *l'shem shamayim*, or "argument for the sake of Heaven", frames conflict not as a zero-sum competition but as a sacred, collaborative effort to approach truth. The "Heaven" in the phrase points to a divine truth that is bigger and more multifaceted than anyone can claim to fully know.

One model for this ideal is the respectful intellectual debate between the Houses of Hillel and Shammai, two leading rabbinic schools that, in the first century CE, laid the foundations of Jewish Law (*Halakha*).

Although their disagreements were fundamental and numerous, the Talmud recounts that they maintained love and friendship towards one another. The School of Hillel, whose positions were eventually adopted as Jewish law, was particularly known for being kindly and humble, and always studied and honourably presented the arguments of Shammai before stating their own.

Contemporary Examples

The belief that conflict, when pursued in service of a higher good, can yield greater truth is not confined to ancient Judaism. Many modern legal systems rest on the same premise.

Common law jurisdictions like the United Kingdom, the United States, and most Commonwealth nations are known as adversarial legal systems. In these systems, a determination of fact is made after the judge (or jury) has heard all parties present their evidence, make

their arguments, and cross-examine the other side. The structure reflects a core belief that truth emerges most clearly when opposing cases are fully tested.

Even "inquisitorial" systems in civil law jurisdictions uphold a similar commitment. A foundational principle shared by common and civil law alike is *audi alteram partem*—"let the other side be heard." A similar ethic is echoed in Islamic law: "When two men come to you seeking judgement, do not judge for the first until you have heard the statement of the other."

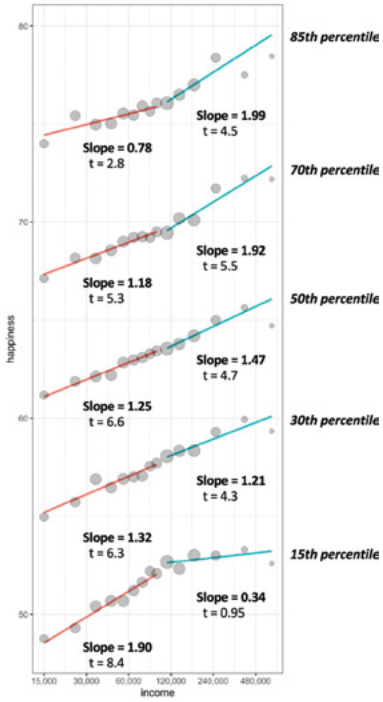
Where, then, is the assurance that parties argue for the sake of heaven, rather than for argument's sake? One procedural guardrail lies in the role of the lawyer. Although often caricatured in popular media as prioritising partisanship and profit over truth, lawyers are, in theory (and with varying success in practice), bound to act in service of truth. Their duties are enforced through professional codes, disciplinary tribunals, and ultimately the court itself. In Singapore, the *Legal Profession (Professional Conduct)* Rules state this hierarchy plainly: "A legal practitioner has a paramount duty to the court, which takes precedence over the legal practitioner's duty to the legal practitioner's client."

At the centre of Raphael's *The School of Athens*, Plato points upward toward abstract ideals, while Aristotle gestures toward the earth to ground knowledge in physical experience. They hold opposing views, but share a desire for truth.

A parallel in scientific research is "adversarial collaboration", a method championed by Nobel laureate Daniel Kahneman to resolve academic disputes productively. The process requires disagreeing parties to make good faith efforts to articulate each other's positions, craft a joint experiment that could falsify both their theories, agree to abide by the outcome, and co-author a paper on the results.

A notable example involved Kahneman himself and psychologist Matthew Killingsworth. Kahneman's 2010 study found that happiness plateaus around an income of $75,000, while Killingsworth's 2021 research found no such ceiling. Instead of trading critiques in journals, they entered an adversarial collaboration moderated by psychologist Barbara Mellers.

Their co-authored paper in 2023, "Income and Emotional Well-Being: A Conflict Resolved", presented a more nuanced and unified theory. They found that for the majority of people, happiness does continue to rise with income, aligning with Killingsworth's finding.



This graph from the study shows how income's correlation with happiness depends on an individual's emotional baseline. For the majority, well-being rises steadily with income. However, for the unhappiest 15th percentile, happiness plateaus at $100,000.

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However, for the least happy 15–20 percent of the population, happiness plateaus around $100,000, supporting Kahneman's original theory for this specific group. They concluded that this "unhappy minority" experiences a ceiling because they are beset by misery which money alone cannot alleviate—such as bereavement or clinical depression.

Techniques for Productive Conflict

The intellectual regard shown by the School of Hillel remains foundational to any practice of constructive disagreement. It is reflected in the modern idea of "steelmanning", the opposite of a "straw man." To steelman an argument is to articulate an opponent's position in its strongest and most persuasive form. The concept was famously formulated by social psychologist Anatol Rapoport, who suggested that a critique is only valid after one has restated the other's view so well that they can say, "Thanks, I wish I'd put it that way." By engaging the strongest versions of all ideas, participants shift from zero-sum conflict to positive-sum outcomes.

For an opponent to shift, they often need an honourable way to do so—what negotiator William Ury, drawing from Sun Tzu, calls "building a golden bridge." Backing someone into a corner only entrenches their position; to avoid humiliation, they may double down out of pride.

Instead, one must always remember to build a "golden bridge": a path for anyone to augment their stance without shame. For example, one might credit new data for a change of mind, or acknowledge their concession as a wise adjustment. Doing so creates a passage towards a shared solution, where both sides have latitude to admit both rights and wrongs with less emotional sting.

Rehumanising the Other

Regrettably, the prerequisite of good faith is often what is missing in communities torn by extreme polarisation. When each side views the other as dangerous, the first step must be to rehumanise the "other."

Braver Angels, a grassroots organisation founded in Ohio after the divisive 2016 U.S. election, designs structured programmes to bridge the partisan divide. Their Red/Blue Workshops are co-chaired by a conservative-

A session by non-profit Living Room Conversations, with participants of different ages and backgrounds engaged in structured political dialogue in an intimate home setting, with discussion materials on the coffee table.

leaning "Red" and a liberal-leaning "Blue." In a fishbowl exercise, one side speaks about their values while the other listens silently. In another, participants try to articulate what they believe is at the heart of the opposing side's view.

The workshops teach skills for de-escalation: fair paraphrasing, clarifying questions that do not interrogate, and the use of "I" statements to express personal sentiment rather than universal judgement. Through these practices, commensurable ground emerges even amongst acrimonious parties.

Conflict Kitchen, a public art project in the form of a take-out restaurant, served food exclusively from countries the United States had active conflicts with. Operating in Pittsburgh from 2010 to 2017, the project introduced the city to its first-ever Iranian, Afghan, Venezuelan, North Korean, Palestinian and Haudenosaunee (Iroquois) restaurants.

The façade of *Conflict Kitchen* would change every few months to focus on a new country. Each meal came packaged in custom-designed wrappers featuring interviews, political analysis, and personal stories of those in the featured country and its diaspora.

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When ordering a *kubideh* kebab, a customer might read a young Iranian's critiques of their own government, and realise that the concerns of citizens in the country portrayed as "axis of evil" are the same as any American's; for a government is not its people. When ordering a *musakhan*, customers read about groves in Palestine where olive trees can be thousands of years old, signifying a living culture that has been passed through generations.

The Iranian iteration of *Conflict Kitchen*, showing the restaurant's transformed storefront with Persian-inspired geometric patterns.

Beyond selling food, the project hosted dinners, performances, and workshops with people from the featured communities. It created a casual space where visitors could engage with the culture of a supposed enemy. The ordinariness of lunch disarmed the diminishing lens of geopolitical conflict, and nourished an appetite to learn about cultures otherwise known only as the enemies'.

Coda

After a three-year debate between the Houses of Shammai and Hillel, a heavenly voice is said to have declared: *Elu v'elu divrei Elohim chayim*—"These and these are the words of the living God." The story affirms that both views, though opposing, contain divine truth. It is possible for contradictions to exist within a multifaceted—and often mysterious—whole. As the late Rabbi Lord Jonathan Sacks taught, "argument for the sake of heaven" celebrates diversity of thought even within a covenantal community.

Instead of suppressing disagreement into a fragile conformity, a state the father of peace studies Johan Galtung would call "negative peace" (the mere absence of violence), difference becomes a spark for robust discussion. The goal instead is "positive peace", a resilient state of true understanding achieved not in spite of, but because of, difference. Conflict might be inevitable, but destruction is not.

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अहिंसा, अपरिग्रह, अनेकान्तवाद
(Jainism's Three Jewels)

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Andante
(At a Walking Pace)

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(The Unity of Self and Others)

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Merantau
(To Wander From Home)

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(The Philosophy of Subtraction)

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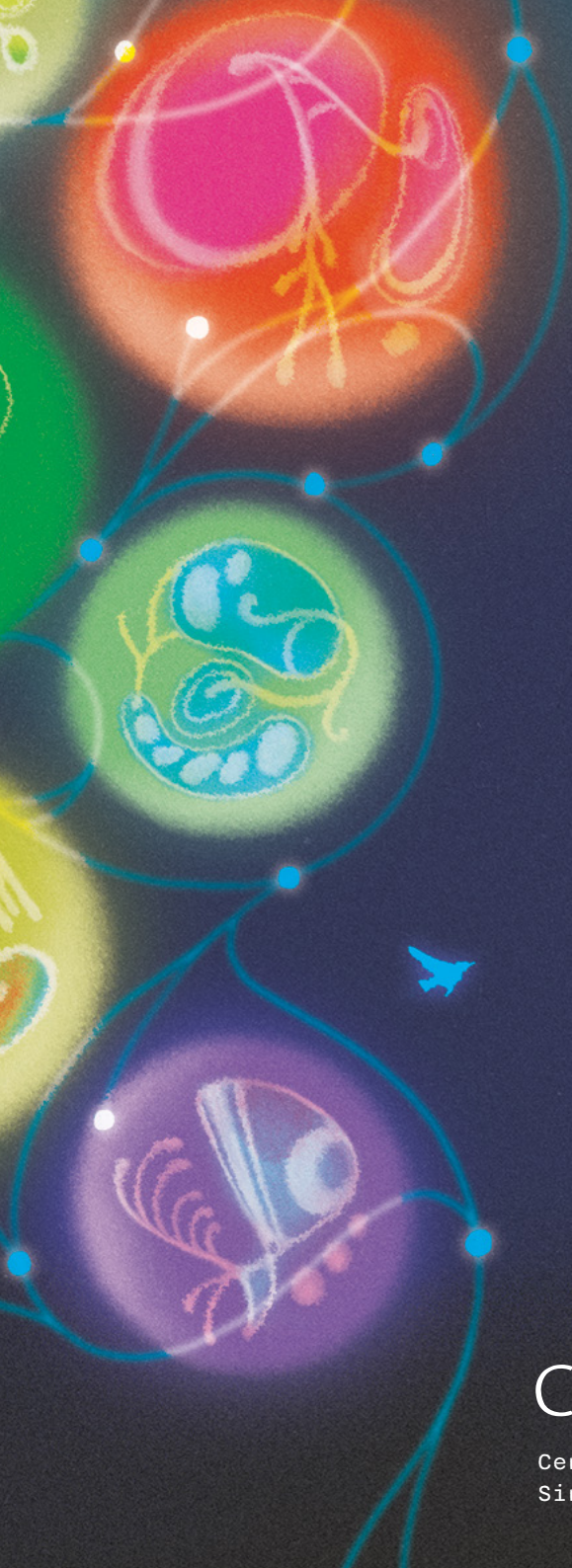

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